



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

REQUEST FOR FILING CONTINUATION/DIVISIONAL
APPLICATION UNDER 37 C.F.R. § 1.53(b)



Box PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This is a request for filing a ☒ continuation ☐ divisional application under 37 C.F.R.
§ 1.53(b) of pending Application No. 08/995,591 filed on December 22, 1997, for
INTEGRATED BUSINESS-TO-BUSINESS WEB COMMERCE AND BUSINESS
AUTOMATION SYSTEM, by the following named inventor(s):

- (a) Full Name Charles Wong
- (b) Full Name _____
- (c) Full Name _____

☒ The entire disclosure of the prior application from which a copy of the oath or declaration is
supplied herewith is considered as being part of the disclosure of the accompanying
application and is hereby incorporated by reference therein.

☐ This application is being filed by less than all the inventors named in the prior application.
In accordance with 37 C.F.R. 1.63(d)(2), the Commissioner is requested to delete the
name(s) of the following person or persons who are not inventors of the invention being
claimed in this application.

- (a) Full Name _____
- (b) Full Name _____
- (c) Full Name _____

1. ☒ Enclosed is a copy of the prior Application No. 08/995,591 as originally filed on
December 22, 1997, including copies of the specification, claims, drawings and the
executed oath or declaration as filed.
2. ☐ Enclosed is a revised prior application and a copy of the prior executed oath or
declaration as filed. No new matter has been added to the revised application.
3. ☒ A statement(s) claiming small entity status ☐ are enclosed ☒ were filed in
prior Application No. 08/995,591, filed on December 22, 1997.

4. ☒ The filing fee is calculated below ☒ and in accordance with the enclosed preliminary amendment:

C L A I M S					
	NO. OF CLAIMS		EXTRA CLAIMS	RATE	FEE
Basic Application Fee					\$760.00
Total Claims	37	MINUS 20 =	17	x \$18.00 =	306.00
Independent Claims	11	MINUS 3 =	8	x \$78.00 =	624.00
If multiple dependent claims are presented, add \$260.00					-0-
Total Application Fee					1,690.00
If small entity status is claimed, subtract 50% of Total Application Fee					845.00
Add Assignment Recording Fee of \$40.00 if Assignment document is enclosed					-0-
TOTAL APPLICATION FEE DUE					\$845.00

5. ☐ Charge \$ _____ to Deposit Account No. 02-4800 for the fee due.
6. ☒ A check in the amount of \$ 845.00 is enclosed for the fee due.
7. ☒ The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in triplicate.
8. ☒ Cancel in this application original claims 2-81 of the prior application before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)
9. ☒ Amend the specification by inserting before the first line the sentence: --This application is a ☒ continuation, ☐ divisional, of Application No. 08/995,591, filed December 22, 1997.--
10. ☐ Transfer the drawings from the pending prior application to this application and abandon said prior application as of the filing date accorded this application. A duplicate of this paper is enclosed for filing in the prior application file. (May only be used if signed by person authorized under 37 C.F.R. § 1.138 and before payment of issue fee.)

11. ☒ New drawings are enclosed.
12. ☐ Priority of Application No. ___ filed on ___ in ___ (country) is claimed under 35 U.S.C. § 119.
- ☐ The certified copy of the priority application
- ☐ is enclosed
- ☐ was filed on ___ in prior Application No. ___, filed on ___
- ☐ has not yet been filed.
13. ☒ A preliminary amendment is enclosed.
14. ☒ Also enclosed is a return postcard.
15. ☒ The power of attorney in the prior application is to Burns, Doane, Swecker & Mathis, LLP.
- a. ☒ The power appears in the original papers in the prior application.
- b. ☐ Since the power does not appear in the original papers, a copy of the power in the prior application is enclosed.
- c. ☐ Recognize as Associate Attorney ___.
- d. ☒ Address all future communications to: (May only be completed by applicant, or attorney or agent of record.)

Michael J. Ure
BURNS, DOANE, SWECKER & MATHIS, L.L.P.
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July 15, 1999
Date

By: Michael J. Ure
Michael J. Ure
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ADDRESS OF
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☐ assignee of complete interest
☒ attorney or agent of record
☐ filed under 37 C.F.R. § 1.34(a)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
)
Charles WONG)
)
Application No.: Unassigned) Group Art Unit: Unassigned
(Divisional of USSN 08/995,591))
)
Filed: Herewith) Examiner: Unassigned
)
For: INTEGRATED BUSINESS-TO-)
BUSINESS WEB COMMERCE AND)
BUSINESS AUTOMATION SYSTEM)

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the application as follows:

IN THE CLAIMS:

Please cancel claim 1 and add the following new claims:

82. In a Web-based business-to-business electronic commerce system including a database and a Web server, a method of selecting products for purchase, comprising the steps of:

a Web user during a first session selecting at least a first product;
the system storing identification of said first product within a first product collection; and
the Web user during a subsequent session causing the first product collection to be retrieved.

83. The method of Claim 94, wherein the product collection is caused to be retrieved using a flexible identification procedure.

84. The method of Claim 94, further comprising the Web user, during the subsequent session, performing at least one of the following actions: adding an item to the first product collection, deleting an item from the first product collection, deleting the first product collection, and at least partially duplicating the first product collection to form a different product collection.

85. The method of Claim 96, further comprising changing at least one parameter of a duplicated item, wherein the parameter is one of the following: quantity, price, cost and term.

86. The method of Claim 96, further comprising classifying product collections into multiple categories according to use.

87. The method of Claim 98, wherein said categories include at least one category in accordance with which a product collection is used as a customized miniature electronic catalog.

88. The method of Claim 99, further comprising an authorized user making changes to a customized miniature electronic catalog via the Web.

89. The method of Claim 100, wherein the changes made by the user are immediately effectuated.

90. The method of Claim 94, further comprising the Web user, during the subsequent session, creating a second product collection specifying as an item at least one item from the first product collection.

91. In a Web-based business-to-business electronic commerce system including a database and a Web server, a method comprising the steps of:

creating within the database item collections, each item being a potential subject of a business transaction; and

users creating new item collections at least partially derived from existing item collections, producing a multiplicity of item collections related by derivation.

92. The method of Claim 103, further comprising applying different classifications to different product collections.

93. The method of Claim 104, wherein the product collections include quotes.

94. The method of Claim 104, wherein the product collections include Master Worksheets.

95. A method of processing customer service requests relating to a product, including returns, over the Web, comprising:

defining an automated workflow process for customer service requests, including returns, that uses a database and a Web-enabled database management system; and

a user, via the Web in a self-help manner, causing a customer-service/return record to be created in the database.

96. The method of Claim 107, wherein the customer-service/return record created is related to a pre-existing database record.

97. The method of Claim 108, wherein, for at least some customer-service/return records, the automated workflow process reverses a previously executed workflow process.

98. The method of Claim 107, wherein the customer-service/return record is categorized in accordance with types including multiple ones of the following types: under warranty part not required, under warranty part required, out of warranty part not required, out of warranty part required, mis-shipped, refused, lost or damaged with or without insurance claim, missing components, duplicate shipment, inventory, cancellation, transferred order, and never shipped.

99. The method of Claim 110, including hierarchically related customer service/return record types.

100. In a Web-based business-to-business electronic commerce system including a database and a Web server, a method of transaction processing, comprising the step of:

obtaining from multiple parties via the Web demand information specifying an item to be the subject of a transaction; and

within said database, organizing transaction information into self-contained workflow units having a predetermined format and each including demand information for a particular party, the predetermined format defining a command demand document enabling demand information to be capsuled for a range of differentiated business transactions of different complexity.

101. The method of Claim 112, wherein the database contains workflow units derived from multiple ones of the following sources: customer, vendor, and database owner; the method comprising the further step of grouping demand information from different ones of said sources.

102. The method of Claim 112, wherein said workflow units are each related to one or more item-level records, updates to which are immediately and automatically propagated throughout the database.

103. The method of Claim 112, wherein a workflow unit is related to at least one of a related workflow unit and a customer-service/return record.

104. The method of Claim 112, further comprising displaying a workflow unit in said predetermined format, including displaying as part of said predefined format a plurality of user options for taking action with respect to the workflow unit or with respect to items specified within the workflow unit.

105. The method of Claim 112, wherein said demand information is current customer demand information obtained via said Web server.

106. The method of Claim 112, wherein said demand information is internally generated.

107. A method of organizing and displaying information stored within a database to facilitate a user task, comprising the steps of:

specifying a classification scheme, consistent with common business practice and terminology;

applying an algorithm whereby items are classified, marked and displayed according to classification for performing a particular business function; and

within a single display screen, displaying the categorized items along with one or more user interface controls for taking action with respect to one or more items.

108. The method of Claim 119, wherein said items are classified in accordance with a hierarchy of classifications such that an item is classified within a highest classification within said hierarchy that pertains to said item.

109. A method of handling customer requests over a global computer network, comprising the steps of:

receiving via a global computer network a post-sale customer request related to a previously-sold item;

evaluating the request based on customer-specific criteria, including criteria set by at least one business partner, and historical data; and

if the applicable criteria are met, automatically approving the request.

110. A method of satisfying demand using a global computer network, comprising the steps of:

receiving demand information from multiple sources via a global computer network;

grouping demand information received from multiple different sources, producing grouped demand information;

retaining a distinct record of individual demand information received from each of the multiple different sources;

performing one processing step using the grouped demand information; and

performing another processing step using the individual demand information.

111. The method of Claim 122, further comprising propagating demand information to at least one of customers and suppliers, including applying a classification scheme whereby items are classified, marked and displayed according to classification.

112. The method of Claim 122, wherein the demand information includes demand information from multiple ones of the following sources: customer, vendor and database owner.

113. A method of establishing an end-to-end business-to-business commerce system for the sale, or sale and service, of product items, using a Web-enabled relational database management system running on a server platform, the method comprising the steps of:

for at least one business partner, storing within the database, in accordance with a single database schema, all current records required to perform a full spectrum of business functions throughout a life cycle of each product item; and

limiting a number of business partners for which current records are stored within the database.

114. A method of establishing an end-to-end business-to-business commerce system in which product items are sold, using a Web-enabled relational database management system running on a server platform, the method comprising the steps of:

providing within a single automated system data and methods spanning multiple business functions, the data being stored in accordance with a single database schema;

providing a user interface that allows open navigation by a user between information pertaining to different business domains, and, for each of multiple business functions, displaying within an integrated decision making environment complete information required to perform that business function; and

dynamically defining multiple virtual business departments by, for each of multiple groups of people, assigning substantially similar access privileges to each person within the group, wherein the access privileges of different groups are substantially different.

115. The method of Claim 126, wherein different people within the same virtual department work in geographically distant locations.

116. A method comprising the steps of:

providing an end-to-end, business-to-business, e-commerce business automation software for automation business functions across multiple business domains;

identifying multiple modules of the software; and

via Web administration, producing a software configuration in which selected ones of the modules are enabled or disabled;

wherein the software producing a workscope/workflow structured display of complex database records each comprising multiple lines of text and pertaining to both a first party to a business transaction and a second party to the business transaction, the structured display constituting an integrated decision-making environment for a particular business function.

117. A system for end-to-end, business-to-business electronic commerce, comprising:

a server platform running a Web-enabled relational database management system; stored in the database, an item table comprising item records, each item record containing business domain-specific fields pertaining to a plurality of the following business domains: products, payments, performance and personnel;

software for reading item records, organizing selected information from the item records, and presenting the selected information as domain-specific displays;

whereby, once item information has been input and committed, it is immediately available for viewing by a multiplicity of information workers, different information workers having responsibility for different ones of said domains.

118. The apparatus of Claim 129, wherein, information stored within a field of an item record is the only instance of that information within the entire database.

Respectfully submitted,

Burns, Doane, Swecker & Mathis, L.L.P.

By: _____



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Date: July 15, 1999

I hereby certify that this paper or form is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

INTEGRATED BUSINESS-TO-BUSINESS WEB COMMERCE AND BUSINESS AUTOMATION SYSTEM

MICHAEL J. URE
(Typed or printed name of person mailing paper or fee)

BACKGROUND OF THE INVENTION

(Signature of person mailing paper of this application include a microfiche appendix containing a database structure diagram made up of 30 constituent pages.

1. Field of the Invention

The present invention relates to business-to-business Web commerce and to business automation systems.

2. State of the Art

Web commerce may be defined as the use of a computer network, such as the Internet, to do business, such as buy and sell products or services. Although Web commerce is still in its infancy, relatively speaking, Web commerce is predicted by some to soon become the dominant mode of business practice. Web commerce allows business to move much more quickly, without the burden and cost of paperwork.

Despite the promise of Web commerce, current Web commerce software is typically of very limited capability. Most Web commerce is consumer-oriented rather than business-oriented. The tacit assumption is that the purpose of the Internet should be to enrich people's personal lives more than to enable business to move at light speed. Furthermore, typically each transaction is treated in isolation. No on-going course of business is assumed or facilitated.

Material management functions such as procurement represent a substantial expense and burden for medium and large businesses. Purchases are typically subject to approval at multiple levels. In the case of the purchase of a computer, for example, an employee might submit a purchase request to the employee's supervisor, who might approve the request and forward it to the MIS (Management Information Systems) department, which might approve the request and forward it to accounting for budgetary approval. The real cost of such a process is estimated to

be as much as \$100 per purchase request. Furthermore, the time required for such a process to be completed may be weeks or months. In the meantime, productivity may suffer.

Purchasing, moreover, is only part of the larger problem of material management. Once materials have been procured, typically they must be tagged, tracked and accounted for, both physically and in accounting terms such as depreciation, etc. The latter activities may either be conducted in an organized fashion, often at considerable expense, or haphazardly, with marginal effectiveness.

Existing Web commerce software is likewise fraught with problems for the selling company. When an order is placed through the Web, it typically results in a fax or email, information from which must be manually entered into an internal sales system that may or may not be linked to other closed systems such as accounting, human resources, purchasing, assembly, etc. Hence, once the entry is made, depending on the degree of automation, additional manual intervention may be required to achieve the desired final result, e.g., ship a product to a customer. The purchaser is typically unable to determine the status of an order without placing a call or sending an email. Moreover, order fulfillment is again only a part of the larger problem of total customer satisfaction (which is in turn only a part of the larger problem of running a successful, profitable business). Returns are bound to occur and must typically be handled manually, typically by a Return Merchandise Authorization (RMA) or traffic department. Also, some fraction of shipments are bound to be lost or damaged. Related insurance claims typically must also be handled manually both by the traffic and accounting departments. Even though the foregoing activities are closely related functionally, the mechanisms for handling these activities, whether manual or automated, are often *ad hoc*.

On a business-wide scale, the same is largely true: the various activities of the business, while they may be separately automated, are not automated in a unified, synergistic fashion. Most often, different departments each have separate

database systems with the departments being linked by a local- or wide-area network. A person in one department obtains information from a different department by sending an email and requesting a report. Referring more particularly to Figure 1, in accordance with a typical model of business automation, various departments (e.g., sales, sales support, customer service, accounting, purchasing, receiving, engineering, assembly, shipping) are separately automated but linked together by a computer network (e.g, LAN, WAN). Each department interfaces to multiple different departments in an essentially manual fashion but using modern electronic communications tools—phone, fax, email, computer hardcopy, etc. Comparison of the resulting overall business process to a Rube Goldberg invention is apt, if mildly exaggerated. The process entails repeated transmission of duplicate information to different departments and repeated transmission of additional information and instructions to different departments on an as-needed basis. The party transmitting the information controls the amount and quality of information conveyed. The party receiving the information has no control over the information or the quality of the instructions received but rather is entirely dependent on the party transmitting the information. Duplication occurs both within departments and between departments. An external influence to the system (a call from a customer or vendor, a new customer account, a ruffled employee) can and often does cause a flurry of activities, but often produces less-than-commensurate positive results because of the inherent inefficiency of the system. The process, because it is ill-defined, is not easily reversible when an error has been made.

The foregoing model results in the fragmentation of information— “the right hand does not know what the left hand is doing.” Information is transported from one place to another, either in hardcopy form, necessitating re-entry, or in such electronic form as to require substantial massaging, and with substantial latency such that by the time the information is to be used it is already outdated. A business executive, for lack of readily-available, accurate, verifiable information *in*

usable form, must then rely heavily on subordinates to obtain a picture (hopefully accurate) of what is happening inside the company. Considerably employee time may be spent gathering historical data to satisfy the need for management information. The same factors that hamper management performance may also cause performance at lower levels within the company to suffer. Employees may lack timely information regarding critical tasks that need to be performed. For lack of timely information regarding returns, for example, or some other aspects of operations, accounting personnel may pay invoices that should in fact not be paid.

The lack of readily-available, verifiable information in usable form is most pronounced in relation to financial information. In the case of a sales company doing a substantial volume of business, for example, preparation of a state sales tax return may take ten man-days or more. An audit may take a similar amount of preparation. Closing the books on an accounting period is itself an arduous task. The time requirements and challenges posed by month-end and year-end closings are all-too-familiar to virtually all in-house accountants. Despite these heroics, the inherent latency of the process diminishes the value of the results. A finalized June statement, for example, might be received at the end of July or the beginning of August, hampering the ability to react quickly to changing business conditions.

For lack of readily-available, verifiable information in usable form, employee evaluation is often performed more on the basis of perception than objective reality. The appearance of performance then becomes at least as important as real performance. Employee performance and employee morale may suffer as a result.

Numerous "high-power" database application software packages exist in the marketplace, from such industry leaders as SAP, Peoplesoft, BAAN, and Oracle. The solutions of each of these vendors have strengths and weaknesses. SAP, for example, although strong in the area of fixed asset management and financials, does not provide shipping and receiving functions. To automate these functions

requires the use of separate software. Furthermore, Web integration is problematic. BAAN is strong in the areas of shipping/receiving, manufacture and assembly, but is limited in the areas of fixed asset management and material handling. In particular, BAAN is bound by conventional notions of real inventory—an item must physically be in stock before it can be ordered (as contrasted with the concept of virtual inventory, explained more fully hereinafter). Peoplesoft offers strong human relations functions but is not strong in “back-end” functions. Software packages from Peoplesoft and BAAN are therefore often linked together to provide a more complete solution. Similarly, software from SAP may be linked to software from BAAN. Oracle offers discrete modules for almost all of the functions offered by the other software packages. The modules must be linked together in a laborious process, however. None of these software packages have a Web-centric design, nor has any been used to successfully implement an automatic end-to-end business process, even in large corporations having no lack of resources.

Web-centric “e-business solutions” are offered by Pandesic (Intel and SAP), Actra (Netscape) and other (typically early-stage) companies. In the case of Pandesic, early promotional materials indicate a distinct consumer orientation as opposed to business-to-business. A conventional real inventory model is followed in which product must be warehoused and on-hand in order to allow the product to be ordered. Furthermore, Web operations are segregated from non-Web operations, necessitating duplication. In the case of Actra, a portfolio of commerce software, including legacy application integration modules, are designed to “bridge gaps between enterprises and applications,” enabling business-to-business transactions, buyer-side and seller-side procurement, consumer on-line Internet storefronts, and commercial Internet publishing. This “gap-bridging” approach likewise entails substantial duplication.

Dell and Cisco each sells computer and networking equipment directly to consumers over the Web using configuration and order software developed by out-

A need therefore exists for software that enables end-to-end, business-to-business Web commerce and that automates to the greatest degree possible, in a unified and synergistic fashion, the various aspects of running a successful and profitable business. The present invention addresses this need.

The present invention, generally speaking, provides software that enables end-to-end, business-to-business Web commerce (Web business, or e-business) and that automates to the greatest degree possible, in a unified and synergistic fashion and using best proven business practices, the various aspects of running a successful and profitable business. Web business and business automation are both greatly facilitated using a computing model based on a single integrated database management system (DBMS) that is either Web-enabled or provided with a Web front-end. The Web provides a window into a “seamless” end-to-end internal business process. The effect of such integration on the business cycle is profound, allowing the sale of virtually anything in a transactional context (goods, services, insurance, subscriptions, etc.) to be drastically streamlined. In the case of a just-in-time product reseller, for example, a comprehensive product list is updated electronically in real time or at regular intervals from various sources (e.g., by file download, over the Web, or from CD or floppy distributions or other media or even manual input). A graphical Web interface allows a user to obtain a quote based on the product list. The quote is assigned a quote number and saved in the DBMS and may be retrieved and viewed at a later date. Based on the quote, a user with appropriate Web-verifiable authority may place an order on behalf of a company in accordance with a pre-existing agreement with the company. An employee of the seller, using the same DBMS, purchases product to fill the order. When the product

is received, information regarding receipt of the product is entered into the DBMS. Orders are assembled, shipped and billed, all using the same DBMS. Customers can retrieve previous quote records and view order and shipment status via the Web. Customer invoices are automatically generated upon shipment. When a customer payment is received, details concerning the payment are entered into the DBMS. Vendor invoices and payments are also handled using the DBMS, and both customers and vendors can view payment status—invoice, credit (from returns), etc.—via the Web, allowing paper invoice copies to be dispensed with if desired. Returns are provided for and may be return of an entire piece of equipment or replacement of a warranted component part, and replacements may be electronically tracked. Parts tracking saves employee time that would otherwise be spent responding to customer inquiries, and also contributes to customer satisfaction through the convenient availability of timely information.

Throughout the foregoing process, a nightly update process is performed in which consistency checks are performed and in which accounting information (including sales tax information) is collected, journal entries made, and general-ledger entries posted. When records are edited, they are flagged to be checked during the nightly update so that adjusting entries may be made if necessary. At any time, the update process may be run and an accounting period closed. Real-time, audit-ready financial information accurate up to the day or up to the hour is available within minutes at the touch of a button without the need for a highly-trained accountant. A novice can perform many of functions typically performed by accountants, with periodic review and supervision by an accountant.

Because the DBMS is Web-enabled, given the appropriate privileges, a complete up-to-the-minute view of every aspect of a business is available from anywhere in the world. Telecommuting is greatly facilitated, with its attendant cost savings. Furthermore, factual evaluation of employee performance, whether of a telecommuting employee or an office-based employee, is greatly facilitated by sta-

tistical analysis of accumulated historical performance data (tasks, projects, assignments, reports).

Driven by the goals of enabling widespread telecommuting and global cyberspace trading, the single database business process software provides parallel information access to all users. All users have access to all information except information determined by management to be of a confidential nature. The system provides built-in assurance of prioritized workflow and best business practice (the optimum known way that a business process should flow) based on self-correcting business knowledge algorithms. The system draws upon a knowledge base to prevent mistakes anticipated by the software designer as well as mistakes that have occurred in the past and have been corrected for by adding to the knowledge base, which is continually accumulating. (In the case of conventional programs, program rewrites often result in both improvements and decided slips backward.) The system lists and prioritizes uncompleted work that needs to be followed up. All user activities are tracked, and users are held accountable. Every activity performed by users are tracked statistically. Problem sources may therefore be identified. Precision training and factual performance review are made possible, significantly empowering users in their assignments.

The software provides for business scalability (as opposed to mere data processing scalability), minimizing the growing pains experienced by rapidly growing companies. In growing companies, as the responsibility for a process becomes divided among more and more people, becoming more and more diffuse, communication between group members becomes more and more difficult and the process becomes increasing difficult to manage. The present invention, in particular, makes workflow and work quality substantially immune to changes in the number of employees and the experience level of employees. Work discipline and organization is enforced by, and teamwork and communication between users facilitated by, the database. The ease of use of the database system and the knowl-

edge base incorporated within the system minimizes the need for extensive employee training and allows for flexible employee roles. Business scalability also entails dramatically increased productivity through automated computer assistance, allowing business growth to greatly outstrip personnel growth. One example of business scalability is in the area of purchasing. Orders are grouped for purposes of purchasing such that the number of purchase orders to vendors does not increase as the number of orders received.

Conceptually, the invention allows for the integration and time-scale compression of what have heretofore been largely independent, human-dependent business processes. Business processes have typically been organized into separate business domains, chiefly including a products domain (e.g., engineering, manufacturing, purchasing, shipping, receiving, returns), a payments domain (e.g., accounts receivable, accounts payable), a financial performance domain (e.g., general ledger, financial statements, tax returns) and a personnel domain (e.g., employee evaluation). In accordance with one aspect of the invention, files for the automation of these various business domains are integrated as part of a single database schema within a single database management system run on one or multiple servers. There results a very tight integration of the foregoing activities and other derivatives of those activities such as product forecasting and cash-flow analysis. In particular, a universal financial report and trend report generator provides for general single or multiple General Ledger (GL) account code analysis including sales, cash flow and material.

Time-scale compression of the resulting integrated business automation process is achieved in two ways. First, the single database management system is Web-enabled, providing access anytime, anywhere. Second, triggers within the single database management system propagate activity from one business domain to a succeeding business domain (e.g., from shipping in the products domain to accounts payable in the payments domain) without duplication of human efforts.

Data can only be entered once and is not ordinarily allowed to be changed or re-entered. Data entry is guided by a built-in best-practice knowledge base.

The integrated business automation process may be easily modularized if desired by restricting access to only files belonging to selected business domains. Hence, unlike conventional business automation suites that provide separate software modules that may be acquired separately and linked together, in the case of the present integrated business automation process, a customer receives everything but may only pay for be given access to a subset of files—e.g. AP/AR files. Later the customer may decide to pay for added capabilities. Such a change in capabilities may be readily administered remotely through the Web. In this manner, the customer is able to “pick and choose” the capabilities that the customer wants to use.

An outside Web user may also pick and choose the capabilities that the user wants to use. For example, orders may be placed by phone or fax but tracked via the Web. Or a user may use the Web only to check the amount owed on open invoices. Others user may use the Web from start to finish, to order products, track orders, track payments, etc.

Extensive measures are taken to ensure that the integrated business process is, to the greatest extent possible, error-free. Only a limited number of controlled entry points to the system are provided. At each entry point, entry validation is performed at the time of entry. Because the business process is integrated, validation may be more extensive and hence more effective than in typical systems. A nightly update process is also performed in which checks are made, including cross-checks between records of files belonging to different business domains. The system is in effect a closed system where all entries must balance appropriately. The nightly update is able to catch and flag errors (or possible errors) that may have occurred despite entry validation, including hardware or system errors, software bugs, and human errors. As errors become apparent that have escaped detection by the sys-

tem, the foregoing mechanisms may be readily revised to prevent future such occurrences. Programmed process intelligence therefore continually increases as errors are detected, flagged, and trouble-shooted so as to add to the wealth of the knowledge base and improve the process methodology.

The integrated processes also automates returns and credits both on the customer side and the vendor side. Returns and credits may be necessitated by user errors that go undetected by the system, by overcharges for freight, or numerous other circumstances. Return requests, Return Merchandise Authorizations, credit memos and accounting adjustments may all be handled electronically.

BRIEF DESCRIPTION OF THE DRAWING

The present invention may be further understood from the following description in conjunction with the appended drawing. In the drawing:

Figure 1 is a block diagram illustrating conceptually a conventional business process;

Figure 2 is a block diagram illustrating conceptually an automated business process in accordance with the present invention;

Figure 3 is a generalized block diagram of a system for business-to-business Web commerce in accordance with an exemplary embodiment of the invention;

Figure 4 is an illustration of a Web Products Search screen display;

Figure 5 is an illustration of a Web Product List screen display;

Figure 6 is an illustration of a Web Product Shopping screen display;

Figure 7, including Figure 7A, Figure 7B and Figure 7C, is an illustration of a Web Quote screen display;

Figure 8 is an illustration of a Quote screen display wherein a window containing any Web user special request is displayed;

Figure 9 is an illustration of a corresponding MWS screen display wherein the same window containing Web user special requests is displayed;

Figure 10 is an illustration of a Products and Quotes screen display in accordance with an alternative Web user interface design;

Figure 11 is an illustration of a Products—Groups and Categories screen display;

Figure 12 is an illustration of a Products—Single Manufacturer Input screen display;

Figure 13 is an illustration of a Products Search screen display;

Figure 14 is an illustration of a Products Search /APL screen display;

Figure 15 is an illustration of a Products Search/Core Products screen display;

Figure 16 is an illustration of a Quote Lookup screen display;

Figure 17 is an illustration of a Find Quote screen display;

Figure 18 is an illustration of a Quote screen display in accordance with an alternative Web user interface design;

Figure 19 is an illustration of an Installation—Selection screen display;

Figure 20 is an illustration of a further installation screen display;

Figure 21 is an illustration of still a further installation screen display;

Figure 22 is an illustration of a Return Merchandise Request screen display;

Figure 23 is an illustration of a Change RMA Ship-To Address screen display;

Figure 24 is an illustration of a Returns—Order Parts screen display;

Figure 25 is an illustration of a first-level Tracking screen display;

Figure 26 is an illustration of a Tracking—Sales Order Status screen display;

Figure 27 is an illustration of a search results screen display;

Figure 28 is an illustration of a further Tracking screen display displaying freight carrier and tracking information;

Figure 29 is an illustration of a linked-to UPS tracking screen display;

Figure 30 is an illustration of a further Tracking screen display displaying ship-to address information;

Figure 31 is an illustration of a Tracking—Return Product and Service Part Status screen display;

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Figure 32 is an illustration of a further Tracking screen display displaying more search options;

Figure 33 is an illustration of still a further Tracking screen display displaying search results;

Figure 34 is an illustration of a Tracking—Product Purchase History screen display;

Figure 35 is an illustration of a further Tracking screen display displaying search results;

Figure 36 is an illustration of a Tracking—Product Return History screen display;

Figure 37 is an illustration of a further Tracking screen display displaying search results;

Figure 38 is an illustration of a Tracking—Accounting Information screen display;

Figure 39 is an illustration of a Customer Invoice screen display;

Figure 40 is an illustration of a Customer Invoice Search Option screen display;

Figure 41 is an illustration of a Customer Invoice Detail screen display;

Figure 42 is an illustration of a Vendor Invoice screen display;

Figure 43 is an illustration of a Vendor Invoice Search Option screen display;

Figure 44 is an illustration of a Vendor Invoice Detail screen display;

Figure 45 is an illustration detailing the authority of various internal users with respect to security parameters in accordance with an exemplary embodiment;

Figure 46 is a diagram of a typical lineage (authority) tree;

Figure 47 is an illustration of a database customer screen display;

Figure 48 is an illustration of a company price list screen display;

Figure 49 is an illustration of one of a series of dialogs used to set Web authority for an employee of a customer;

Figure 50 is an illustration of another of a series of dialogs used to set Web authority for an employee of a customer;

Figure 51 is an illustration of another of a series of dialogs used to set Web authority for an employee of a customer;

Figure 52 is an illustration of another of a series of dialogs used to set Web authority for an employee of a customer;

Figure 53 is an illustration of another of a series of dialogs used to set Web authority for an employee of a customer;

Figure 54 is an illustration of a dialog used to confirm employee information at the conclusion of Web authorization;

Figure 55 is an illustration of the corresponding screen display as shown in Figure 48, following Web authorization;

Figure 56 is a block diagram of a conventional Web commerce computer architecture in which different functions are automated on different computing platforms, necessitating multiple interfaces;

Figure 57 is a block diagram of the present Web commerce computer architecture in which all functions are automated on a single Web-enabled database, necessitating only a single interface;

Figure 58 is an illustration of a partial database schema of one implementation of the system of Figure 3, showing primary files and relationships;

Figure 59 is a block diagram illustrating an automated business process in accordance with an exemplary embodiment of the invention;

Figure 60 is an illustration of a Sales-MWS screen display;

Figure 61 is an illustration of a Quote screen display;

Figure 62 is an illustration of a Products screen display;

Figure 63 is an illustration of a MWS screen display;

Figure 64 is an illustration of a Purchasing view of a PSRI (Purchasing/Shipping/Receiving/Installation) screen display;

Figure 65 is an illustration of a Receiving view of the PSRI screen display;

Figure 66 is an illustration of an Installation view of the PSRI screen display;

Figure 67 is an illustration of a Shipping view of the PSRI screen display;

Figure 68 is an illustration of a PSRI Item Detail screen display;

Figure 69 is an illustration of an Expedite view of the PSRI screen display;

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- Figure 70 is an illustration of an Ordered Not Received screen display;
- Figure 71 is an illustration of a Received Not Shipped screen display;
- Figure 72 is an illustration of an Expedite pop-up, allowing expedite status to be set from a MWS screen display;
- Figure 73 is an illustration of an RMA screen display;
- Figure 74 is an illustration of an Add RMA screen display used to initially create an RMA;
- Figure 75 is an illustration of an RMA add records screen display used to add information to an RMA;
- Figure 76 is an illustration of an RMA Automatic Request Completion file;
- Figure 77 is an illustration of an RMA Automatic Approval Limit file;
- Figure 78 is an illustration of a Customer RMA Automatic Approval file;
- Figure 79 is an illustration of a Vendor RMA Automatic Approval file;
- Figure 80 is an illustration of a Manufacturer RMA Automatic Approval file;
- Figure 81 is an illustration of a Web page used to automatically provide a customer with an RMA number in accordance with the foregoing automatic approval process;
- Figure 82 is an illustration of a Sales Tax Register screen display, including formulas used to calculate figures to be entered within each line of a sales tax return;
- Figure 83 is an illustration of a Customer Invoices screen display;
- Figure 84 is an illustration of the Customer Invoices screen display showing collections information within a pop-up window;
- Figure 85 is an illustration of the Customer Invoices screen display showing collections information by customer within a pop-up window;
- Figure 86 is an illustration of a Customer Payments screen display;
- Figure 87 is an illustration of an OverUnderPay screen display;
- Figure 88 is an illustration of an OverUnderPay details screen display;
- Figure 89 is an illustration of a Vendor Invoices screen display;
- Figure 90 is an illustration of an AP Add Invoices screen display;

Figure 111 is an illustration of screen display including a dialog used to

select trend frequency;

Figure 112 is an illustration of screen display including a window in which trend report data are displayed;

Figure 113 is an illustration of a trend report graph screen display;

Figure 114 is a block diagram of a human resource infrastructure for a virtual organization performance evaluation model;

Figure 115 is an illustration showing in greater detail portions of the human resource infrastructure of Figure 114;

Figure 116 is an illustration of a file structure used to track all performance metrics of interest;

Figure 117 is an illustration showing in greater detail the Factual Measurement Review process of Figure 115;

Figure 118 is an illustration of a series of selection menus used to select an employee for whom a factual employee evaluation report is to be displayed;

Figure 119 is an illustration of screen displays used to display factual performance analysis results in accordance with an exemplary embodiment of the invention;

Figure 120 is an expanded view of the multiple period screen display of Figure 119;

Figure 121 is an illustration of a dialog displayed as a result of qualification of user inputs during the course of adding invoices;

Figure 122 is an illustration of a further dialog of a similar type as that of Figure 121;

Figure 123 is an illustration of yet a further dialog of a similar type as that of Figure 121;

Figure 124 is a partial illustration of a pop-up menu of options available during vendor invoice display;

Figure 125 is a partial illustration of a pop-up menu of options available during vendor invoice display, showing options not shown in Figure 124;

Figure 126 is an illustration of a pop-up menu of options available during customer invoice display;

Figure 127 is an illustration of a pop-up menu of options available during display of items sold;

Figure 128 is an illustration of a pop-up menu of options available during display of sales records; and

Figure 129 is a block diagram illustrating a knowledge base, the expression of the knowledge base in screen displays of the present system, and a manner in which the knowledge base is increased.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Architecture

Referring now to Figure 2, the present automated business process may be imagined as a kind of information assembly line. A first system user, or "information worker," having for example a Sales assignment or activity focus, initiates an automated, end-to-end business process by entering information into a client/server single relational database, which forms a common hub of the automated business process. The user's entry is qualified, or "quality checked," as represented by a checkvalve. Such qualification is "experiential," i.e., derived from actual business experience, and differs qualitatively from the type of data validation typically performed in database systems. If the user's entry fails scrutiny by the system, it cannot be committed to the database. Similarly, the business process cannot continue to the next user. As a result in part of such experiential qualification, verifiable and usable management and enterprise information may be made readily available.

In the case of conventional systems, by contrast, a team of software engineers write an application based on input from groups of users from different departments. The users, however, cannot anticipate the need for various features prior to using the software. Furthermore, the conception of the programmers may often differ significantly from that of the users. The result often leaves much to be desired. Updates are delayed until the next version of the software, at which point the same cycle repeats. Meanwhile, users suffer. Furthermore, because different users have different concerns, little consideration is given to the up-stream and down-stream effects of different user's actions. There results a "disconnect"

In the present system, qualification of user inputs has multiple facets. First, each user is accorded limited access privileges. An authority check is therefore performed to ensure that the user is authorized to make the entry being attempted. Second, the entry is checked in accordance with business rules that embody best practice as determined from an analysis of expected parameters and how various values of those parameters affect possible outcomes downstream. Thirdly, entries, even after then are committed to the database, are subjected to intelligent consistency checks in order to detect discrepancies and provide feedback to allow for correction. If input qualification is successful, then succeeding events in the sequential business process are triggered.

During the process external influences occur. An external influence may be a communication from a customer or vendor, for example, to either convey information or to view information stored in the central database. Information may be conveyed by electronic means (e.g., Internet, intranet, EDI, satellite, remote terminal direct-dial), human-mediated telecommunications (e.g., email, phone, fax), or by physical means (letter, visit, etc.).

As compared with the conventional business process of Figure 1, the circular automated business process of Figure 2 revolves around a single integrated database that accumulates information regarding every important activity of every user and defines a non-repetitive process. Furthermore, as compared to the essentially non-reversible process of Figure 1, the process of Figure 2 is reversible. As seen in Figure 2, following Shipping is a Return/RMA (Return Merchandise Authorization) activity. This activity enables the forward process to be reversed, or

backed out of step-by-step, as part of the overall automated business process.

The cumulative nature of the database of Figure 2 and the sequential nature of the business process enables incisive factual analysis in the areas of employee/vendor performance and customer satisfaction, promoting fairness and personal responsibility. Whereas a human supervisor may effectively supervise only a limited number of employees, the database-implemented business methodology of Figure 2 provides for each employee what may be regarded as a "virtual mentor:" the user is guided during use of the system to prevent common mistakes (in fact, all mistakes made collectively by the all of the user's predecessors functioning in the same assignment), and the user's performance is continuously tracked and made accessible. Strengths and weaknesses in the employees performance may recommend certain changes in assignments—which changes may be made relatively easily by the employee because of the intuitiveness and intelligence of the system. This virtual mentoring process, described in greater detail hereinafter, promises to make the virtual office and telecommuting, with all its attendant advantages, a practical reality for a much wider segment of the workforce.

Referring now to Figure 3, a block diagram is shown of a computing environment in which the present invention may be used. A Web-enabled, client/server relational database management system (DBMS) is provided storing a database including files belonging to different business domains, e.g. a products domain, a payments domain, a financial performance domain and a personnel domain. (The term "product" is used generically herein to refer to items sold and may be tangible goods, financial products, subscriptions—anything that may be bought and sold in a discrete transaction.) Also provided are code modules pertaining to each of the different domains. Customers and vendors may obtain access to the database through the Internet or the like. The physical location of the database therefore becomes irrelevant—the database can be everywhere in the world, either through wired communications or wireless communications. A firewall (or other security

scheme, such as encryption, implemented in either hardware or software) may be provided between the Internet and the Web interface of the DBMS. Internal clients may be connected to the DBMS through a local area network (LAN) or through an intranet, using the Web interface.

Web User Interface

The Web interface to the database, particularly as seen by the customer, will presently be described in greater detail.

Referring now to Figure 4, an illustration is shown of a products search screen display. From the products search screen display, the user is able to fill in various fields (e.g., Manufacturer, Manufacturer Part#, Item Description) to find products within the database. To view a manufacturers list, the user clicks on the first letter of the name of the manufacturer.

The user is also able to find earlier quotes. A user obtains a quote in a manner described below. Buttons are provided to find a quote by quote number, to find quotes for the current day, or to find quotes for the current week.

Assume for purposes of illustration that the user wishes to find products. Having entered product search parameters, the user then clicks on the button Search for Products. A product list within the database is then searched for products matching the specified parameters, and a Product List such as that of Figure 5 is displayed, including a product description, the manufacturer, the media (if applicable), the platform, the manufacturer part number, and the unit price. Items are displayed ten at a time unless some other number is specified from the Product Search screen. The Product List can be further searched by manufacturer, manufacturer part number, or description. At any time, the user may save the Product List as a set by entering a name for the set or may search again.

When the user sees an item of interest displayed on the Product List, the user checks the item. When all of the items of interest have been checked, the user clicks the button Show Shopping List, causing a Product Shopping screen to be

displayed as illustrated in Figure 6. The products checked previously are displayed, including a product description, the manufacturer, the manufacturer part number, and the unit price. Within a quantity column, ones are automatically entered for each item. Zeroing the quantity cancels that item such that it is not included in any quote that is created.

The user by choosing the appropriate action within the pop-up menu can create a quote for the specified items and quantities, can cancel and empty the "shopping basket," can go back to the Products List, or can go back to the Search for Products screen. When a quote is created, it is displayed as shown, for example, in Figure 7. A quote number and the quote date are displayed at the top of the quote. The salesman assigned to the account is displayed, together with account-specific defaults concerning shipping and payment terms. Then the items quoted are displayed, including description, manufacturer part number, unit price, quantity, and extended price. The sub-total, applicable tax, and total are calculated and displayed. A notes box is also provided for the user to enter notes regarding the quote.

A pre-arranged bill-to address and ship-to address are automatically displayed. The user may request that the ship-to address be changed for this order. Typically, for security reasons, such a request would be required to be confirmed in writing or by some other means.

Within the following portion of the screen display, the user is requested to confirm various details of the quote or to disconfirm and provide clarification. (Yes or No must be checked for each detail or the quote cannot be submitted to the sales representative.) A text box is provided for the user to enter special requests. As may be seen in Figure 8 and Figure 9, respectively, these special requests are presented in a window whenever a corresponding quote or purchase order is displayed. Referring again to Figure 7B, a box is also provided to request installation and provide installation instructions. Alternatively, an advantageous method of

specifying installation instructions via the Web, by selecting a primary system and then specifying secondary components to be installed in that system is described hereinafter. Shipping instructions may also be conveyed "phones free" via the Web. In case further clarification is required, the user is requested to enter an email address, fax number or phone number according to the user's preference.

In contrast to consumer-oriented Web commerce, in the present business-to-business Web commerce system, an authorization number is required. The number may be a Purchase Order (PO) number, a Product Identification (PID) number, a Request for Quotation (RFQ) number, a Purchase Requisition (PRN) number, or may be based on unique requirements of the customer specified by a user with proper authority. By arrangement with each customer, one of these various numbers may be singled out as being required for purchase authorization, the remaining numbers being used for reference purposes only. The particular number required for purchase authorization may vary from customer to customer.

Once all of the requested information has been provided, the user then chooses from among possible actions, including making changes to the quote, going back to the Products List, submitting the quote to the sale representative, close the quote without saving any changes that the user may have made, or save the quote without submitting it. Note that a particular user, however, may have authority only to obtain quotes but not to submit quotes (place orders), or may have a purchase limit for a single purchase or for a predetermined time period (e.g., weekly, monthly, quarterly). If the user attempts to exceed his authority, the system will display a dialog informing the user that the selected action cannot be taken.

In practice, if a user is allowed to obtain quotes but not submit quotes, the user will obtain and save a quote, note the quote number, and notify a superior having purchasing authority (e.g., via email) of the quote number. The person having purchasing authority may then use the quote number to retrieve and review the

quote and submit the quote if it is in order.

When a quote has been submitted, a confirmation screen is displayed thanking the user for the order, displaying the quote number, and confirming that the quote has been submitted as an order.

The Web user interface should be made as inviting and as convenient as possible to induce customers to convert to doing business on the Web exclusively insofar as possible. Convenience may be furthered by presenting to the user additional options for listing, searching and displaying product information. The Web user interface may therefore be modified as shown in Figure 10 to present a variety of options relating to products and quotes.

To display a product listing from all manufacturers by product category, option 1 is selected. A page such as that shown in Figure 11 is then displayed. The user may check product groups and categories of interest, e.g., accessories and supplies, input devices, etc. To display a product listing from a single manufacturer by product category, option 2 is selected. A page such as that shown in Figure 12 is then displayed, prompting the user to enter a manufacturer name by either typing in the name or selecting the first letter of the manufacturer's name and then further selecting from a list of manufacturer names beginning with that letter. When the manufacturer has been specified, the Continue button is pressed, and a page like that of Figure 11 is then displayed, whereby the user may specify product groups or categories of interest.

Product listings may also be produced by manufacturer name, description or part number (option 3) or for a single manufacturer by description or part number (option 4). These options cause a page such as that of Figure 13 to be displayed.

Each customer may have each own Approved Products List (APL) in which products are identified by a Product ID (PID). The APL constitutes in effect a company catalog. To search the APL, option 5 is selected, whereupon a page such as

that of Figure 14 is displayed. Instead, products may be searched by purchase history. A customer may have established buying patterns but may not have arranged for an APL. To search "core products," i.e., products purchased before by that company, option 6 is selected. A page such as that of Figure 15 is then displayed.

To view previous quotes, option 7 is selected. A page such as that of Figure 16 is then displayed. The user can find a quote by quote number, show today's quotes, show this week's quotes, etc. Quote information for a particular period may be displayed as shown in Figure 17, allowing the user to select a particular quote for viewing.

A large and complex order may require detailed installation instructions. Consistent with the "phones free" philosophy of the present software, even complicated installation instructions may be conveniently conveyed using the Web. Referring more particularly to Figure 18, showing a display of a quote, an installation button is provided. When the user clicks the installation button, a page such as that of Figure 19 is displayed, affording the user an opportunity to select a system for which installation instructions are to be specified. The user selects a system ("primary item") and clicks the continue button. A page such as that of Figure 20 is then displayed. An item may have multiple item details, some or all of which are to have installation performed. The user selects the number of systems to have installation performed, then clicks continue. A page such as that of Figure 21 is then displayed, showing the other quoted items ("secondary items" available as components to be installed within the foregoing primary item). The user selects items to be installed in the system, specifying quantity (i.e., multiple item details may be installed in a single system).

In the embodiment described, a single configuration is specified for all 10 systems. In other embodiments, different configurations may be specified for different numbers of the total number of systems.

Besides product display, ordering, and installation, returns and tracking are

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vital capabilities provided as part of the same Web user interface. Selecting Returns from a home page or a Returns link from any of the previously described pages causes a page such as that of Figure 22 to be displayed. The user enters identifying information about a product to be returned (e.g., Customer PO#, Customer Invoice#, manufacturer), checks a "radio button" to specify the product's condition (unopened, used, etc.) and select a return type from a menu (e.g., wrong product, defective product, etc.). The seller, with the help of the system, assumes the responsibility of identifying the product based on whatever piece or pieces of information the user is able to provide. For example, the user may know the asset tag number of a product by looking at the product but may have not further information about the product. A text box is provided for the user to enter addition details, if necessary, and fields are provided for the user to enter phone and fax numbers and the user's email address. The page also calls for the user to provide information concerning the condition of the product (opened, unopened, etc.) The RMA request may then be submitted for processing. Prior to submitting an RMA request, the user may wish to change the ship-to address if a replacement product is to be shipped. When the corresponding button is pressed, a page such as that of Figure 23 is displayed for this purpose.

Referring again to Figure 22, ordering parts for out-of-warranty products is provided for on the same page as RMAs, inasmuch as a transaction is needed that relates back to a previous transaction. When the user presses the corresponding button, a page such as that of Figure 24 is displayed. As with an RMA request, the user enters identifying information about the previously-purchased product. Text boxes are then provided for the user to describe the product malfunction, type of problem, parts needed, etc.

Most often, parts will not be ordered by the customer but rather by service personnel. Nevertheless, customers are able to track the status of the part order themselves. Navigating to a Tracking page, Figure 25, causes this option and vari-

ous other tracking options to be displayed. From this page, the customer can track sales order status, RMA and service part status as just described, product purchase history, return and service history, customer invoice and credit memo status, etc. A text box for special comments and phone/fax/email fields are provided as before.

Selecting Option 1, Sales Order Status, causes a page such as that of Figure 26 to be displayed. Two different methods are provided for retrieving sales order status information. The first method involves the user inputting either a customer PO number or customer invoice number. The second method involves the user inputting one or more of various other identifying pieces of information, e.g., manufacturer, manufacturer part number, serial number, month purchased, etc. Both methods allow for the resulting records to be sorted in various way in accordance with the user's preference. Figure 27, for example, shows search results sorted by manufacturer.

By checking selected items and selecting a Get Freight Carrier and Tracking Number menu item, a display such as that of Figure 28 results. By clicking the Track It button, a link is followed to a tracking page of the carrier used to ship the item, United Parcel Service (UPS) for example. A UPS tracking screen is shown in Figure 29. Referring again to Figure 27, by checking selected items and selecting a Ship to Address button, a display such as that of Figure 30 results.

Referring again to Figure 25, selecting Option 2, Return Product and Service Part Status, causes a page such as that of Figure 31 to be displayed. By means of this page, the user can search by case number, quote number, RMA number, PO number or invoice number, for example (Option 1) or can request more search options (Option 2). Clicking for more search options causes a page such as that of Figure 32 to be displayed. When the requested search has been completed, the resulting records are displayed as shown in Figure 33.

The ability to track parts on the Web has far-reaching implications. A large corporation may have hundreds or thousands of computer technicians working

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continuously to many thousands of networked computers working properly. When a user's machine goes down, the user might notify a person in the user's department having computer responsibilities, who might in turn contact the MIS department, which would then contact the technician to do the actual work. The technician, once he or she ascertains where the computer was purchased, might then contact the appropriate sales representative within that company for a replacement part. Within the company, other personnel having responsibilities for customer service, RMAs, and shipping and receiving, as well as supervisory personnel and ultimately the equipment vendor, may then become involved. Because many people are involved on both on the customer side and the seller side, absent the present system, the result is a flurry of activity, emails, phone calls, etc. The user, impatient for his computer to be fixed, call the department computer person, who calls, MIS, which calls the technician, which calls the seller's salesman, etc. When the part is received, it may be shipped to the technician, to the department or to the end user, perhaps without a clear understanding on the part of all parties involved.

Using the present system, on the other hand, all parties have simultaneous access to up-to-date information about the status of the part, whether it has been ordered, received, shipped, the ship-to address, etc.

Referring again to Figure 25, selecting Option 3, Product Purchase History, causes a page such as that of Figure 34 to be displayed. By selecting one option for each criterion, products purchased within a specified time window of a specified date may be found and displayed in sorted order according to the user's preference. Figure 35, for example, shows a display of products purchased within a 30-day window up to and including March 1997, i.e., products purchased within the month of March 1997. Corresponding pages as those for Product Purchase History (Figure 34 and Figure 35) are also provided for Return and Service History (Option 4) as shown in Figure 36 and Figure 37, respectively.

Doing business electronically poses various security risks. In the case of consumer-oriented Web commerce, much attention has been focused on secure transmission of credit card numbers and various security mechanism have been

made available. In the case of business-to-business Web commerce of the type described, payment is usually not by credit card except for very small transactions. Instead, security risks involve potential abuse of the system by external parties or even internal parties. The present invention implements various security mechanisms to eliminate or minimize the potential for such abuse. Fundamentally, the security mechanisms are based on concepts of authority and lineage. A simple example is that the ship-to address for an order cannot be changed on-line. This prevents someone from ordering products and having them sent to their home or elsewhere.

Lineage relates authority to organizational hierarchy. The organizational hierarchy of Web users for a particular customer may be represented in tree fashion. A user at the leaf level may be given authority to get quotes but not to place orders. A user at a next-higher level may be given authority to view the quotes of users within a limited sub-tree and may be given limited authority to place orders. A user at the root of the tree may be given unlimited authority, from the standpoint of the customer, to view quotes of any user and place orders in any amount.

Referring generally to Figure 46, in the case of a typical company, various end users will be given different levels of authority, e.g., to create quotes but not purchase, to track orders, to perform returns, to view order information via the Web, or, in the most limited case, to have no access to Web purchasing information. To initiate the purchase process, an end user makes a quote request to his or her supervisor, who must approve the request. The request may require multiple further approvals, for example of an MIS department, an accounting department, a material management department, etc. In a typical scenario, the material management department will forward an approved request to a purchasing department. Authorized persons within the purchasing department may then send an order via the Web. In every instance, when Web access is attempted (and in fact every time a TCP packet is received), a user's authority is checked and that user's interaction

via the Web is limited to the scope of that authority.

External Web authority information is stored for each customer in a customer file. An example of a customer record is shown in Figure 47. From the customer file, a company price list record such as that of Figure 48 may be displayed. For each customer, a price basis may be agreed upon for items that the customer buys regularly. External Web authority information is stored as part of the customer price list.

The manner in which a external Web user's authority is specified is illustrated in a series of figures beginning with Figure 49. First, the user's name is entered, first name (Figure 49) then last name (Figure 50). An employee number may then be entered (Figure 51), absent which an arbitrary employee number is generated automatically. A dialog then asks whether the user is authorized to make Web purchases (Figure 52). If the user is authorized to make Web purchases, then a further dialog calls for a purchase limit, if any, to be specified (Figure 53). A confirmation dialog is then displayed (Figure 54). The customer price list record following addition of the Web user with specified authority is shown in Figure 55.

The specific limits placed on a user's purchase authority may vary. Other examples of limits that may be desired by some companies are a limit on the number of purchase orders per day, a limit on the total amount of purchase orders per day, a time-of-day limitation as to when orders may be placed, etc. Various other security parameters may be added.

Limits are also placed on internal users access to security parameters so as to provide customer assurance that there exists no potential for internal abuse of the system (e.g, authorizing a crony to make illicit purchases on a customer account). A user may have authority to use (view) but not approve changes to certain security parameters, and may have authority to use and approve changes to other security parameters. In an exemplary embodiment, the authority of various users is set as illustrated in Figure 45.

Catalog Management

In the case of a company based on the conventional model of real inventory, Web catalog management is relatively straightforward. In the case of a company based on the model of virtual inventory, "the world is your warehouse." Intelligent catalog management is therefore of vital importance. Intelligent catalog management, in an exemplary embodiment, is based on a concept of "baseline." A baseline is a collection of products that functions as a standard of comparison. In an exemplary embodiment, there is both a vendor baseline and a customer baseline. Using the baseline concept, a product list without duplicates may be displayed. Furthermore, there may be displayed to the customer only products that there is some reasonable likelihood of the customer buying.

On the vendor side, one vendor is selected to serve as the baseline vendor. The baseline vendor will typically be a vendor found to have the most comprehensive inventory, the most useful categorization scheme, etc., and may be varied as often as desired. To create an update baseline, product listings of vendors are compared with the current baseline. If a product is already part of the baseline, as determined by manufacturer part number, then the product is grouped under the same baseline listing. For example, the same computer may be available through multiple different vendors. Rather than creating multiple product listings for the same product, these multiple product listing are consolidated under a single baseline product listing. If a product is not in the baseline, it may be added to a "supplemental baseline." If the baseline vendor does not carry a particular product but one or more alternate vendors carry the product, then the product will be listed in the supplemental baseline, again without duplicates.

After an updated baseline has been compiled, it is compared with the previous baseline. A product listing may be found: 1) in the old baseline only; 2) in the new baseline only; or 3) in both. Product listings in categories 1 and 2 are flagged as discontinued products and new products, respectively.

During the foregoing process, product cost and customer pricing information is updated. Also updated are URLs to vendor and manufacturer Web sites. These URLs may be used to refer Web users to these sites for product information. Product list updating may occur continuously or at regular intervals using "pull" technology, "push" technology, some combination of the two, or some other information retrieval technology or combination of technologies.

On the customer side, a customer baseline is formed by combining: 1) customer APLs (Approved Product Lists) for all customers or some subset of customers; and 2) historical purchase information, taking into account such factors as purchase date, volume, etc. There results a non-duplicative list of products customers have bought or are presently approved to buy. Products in the vendor baseline may be flagged as belonging or not belonging to the customer baseline.

As a result of the baseline concept and the power of the DBMS, great flexibility is provided in the manner in which products may be displayed. A user may search the product file and request to see new products, discontinued products, vendor baseline products, without duplicates, vendor baseline products expanded to show duplicates, customer baseline products, customer-specific APL products, etc. In this manner, the seeming chaos that would otherwise result from the "infinite" of products embraced by the notion of virtual inventory is tamed and made manageable.

Much of the difficulty of successfully implementing a cohesive business-to-business Web commerce solution has resulted from different aspects of a company's business being automated on different computing platforms. As illustrated in Figure 56, for example, a product catalog may be implemented on one platform, shipping implemented on another platform, accounting implemented on still another platform, etc. To interface all of these different functions to the Web requires multiple interfaces.

By using a single Web-enabled database and providing for all necessary

functions within a single database schema, the present Web commerce solution avoids the daunting complexity characteristic of the prior art. Referring to Figure 57, a single universal interface may be used to place the entire contents of the database, or as much of those contents as desired, on the Web.

Database Schema

An important feature of the present system is that a single database, described by a single database schema, is used to automate an overall business process, end-to-end. To do so, the schema must, understandably, be quite complex. A general outline of the schema is shown in Figure 58. The complete schema, or structure diagram, is set forth in the microfiche appendix filed herewith.

Referring to Figure 58, the manner in which various automation processes relate on an inter-domain basis may be appreciated. The products domain is represented in approximately the upper third of Figure 58 and includes sales functions (5801) and shipping/receiving functions (5803). Purchasing and installation functions, now shown in Figure 58, are shown in the microfiche appendix. The payments domain is represented in approximately the middle third of Figure 58 and includes AP functions (5805), AR functions (5807) and return functions (5809). The financial performance domain is represented in approximately the lower third of Figure 58 and has financial information automatically posted to it from the payments domain, as described more fully hereinafter. The personnel domain is not shown in Figure 58 but draws upon information from the other domains in a manner described more fully hereinafter.

In an exemplary embodiment, the relational database management system provides both a "Quick Switch" option whereby any base table may be viewed or a "Related Switch" option (described in greater detail hereinafter) whereby a base table may be selected from which is then displayed a row related to a selected row in a current table. Various user options may be provided programmatically. Table 1 is a list of most of the base tables and corresponding options in an exemplary

embodiment of the invention.

Table 1

Base Table	(Options)
Addresses	
AllocatedIndex	
AP_Registers	
AR_Registers	
Chart of Acnts	
Checking_Acts	
Ch Statements	
Claims	
Commission Reg	<p>Quick invoice lookup Quick credit lookup</p> <p>Get register Get not approved Get approved but not paid</p> <p>Approve Disapprove</p> <p>Change payment date</p> <p>Pay</p>

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Table 1

Base Table	(Options)
Commissions	<p>Quick lookup by period Quick transaction lookup Quick PO lookup Quick MWS lookup Quick invoice lookup Quick credit memo lookup</p> <p>Get not approved Approve Get approved</p> <p>Schedule payment</p> <p>Notes</p> <p>Hold Get hold</p> <p>Reset back 1</p> <p>Check commissions Recalculate commissions</p> <p>Change commission Email</p>
Contacts File	
CustCredMemos	<p>Quick memo lookup Credits not taken Credits taken Credits on hold Internal credits not taken Internal credits taken Hold credit memo</p> <p>Internal notes Customer notes</p> <p>Internal status change</p>

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Base Table	(Options)
Customers	Add employee purchase record Approve customer Find employee List employees
CustPayments	Get not approved Get not posted Approve Post
Cust_invoices	Quick invoice lookup Cust invoice summary Print selection Comm report Get AR report selection Get not issued Get not paid Get no charge Get pre-paid Close—no charge Split invoice Join 2 invoices Issue invoices Check for not issued invoices
Defaults	
DropShipments	
FAX Templates	
Item Details	

Table 1

Base Table	(Options)
Items Sold	Quick MWS# lookup Add MWS to fast order Open order reports Expedite/availability Customer notes CSR notes Status (restricted) Expand to all items sold Remove shipped Check selection again Update MWSs Clear updates Tech expedite Clear tech expedite Get in house not rcvd Receive in house Get installation not rcvd Receive installation
MWSLog	
OverUnderPay	Get not reconciled Get not cleared Get open Close
Packing Slips	
Partners	Find by expense account Vendor priority maintenance
Personnel	
PID ItemsSold	
PIDs	
Products	

Table 1

Base Table	(Options)
Purchase Stats	
Purchasing	
Quote Detail	
Rcvd Boxes	
Receiving	Receive Installation Update MWSs Double, wrong, defective, or no MWS Fill allocation Freight check Recover receiving register
Report	
RMA	Quick RMA lookup Quick case lookup Quick PO/PID/PRN/RFQ Get Web RMAs Update RMAs Expected cred summary Edit fax cover sheet notes

Table 1

Base Table	(Options)
Sales Records	<p>Quick MWS# lookup Quick quote# lookup Quick PO/RFQ/PID/PRN LU/conf.</p> <p>PurchChecks</p> <p>Update MWSs</p> <p>Expedite/availability/purch</p> <p>Urgent Not Urgent</p> <p>Daily PO confirmation Get quotes Print quote confirmation</p> <p>Quotes requiring REVIEW Cancel REVIEW</p> <p>Get purchasing records Print purchase summary</p> <p>Clear updates</p> <p>Lock Unlock Get unlocked</p> <p>Change TPO to real PO Get temporary POs</p> <p>Get Web quotes</p>
Sales_Reps	
Sales_Support	
Sales_Taxes	<p>Recalc selection</p> <p>Add sales tax</p>

Table 1

Base Table	(Options)
Shipping	Quick lookup by period Quick lookup by pickup number _ Following works in selection Get not reconciled open Get not reconciled closed Get reconciled open Get reconciled closed Installation Update MWSs Freight check Reconcile freight Recover register Merge registers
TaxRegister	Due dates Update user selection Print user selection Sets window
Tax_Tables	

Table 1

Base Table	(Options)
Ven Pmnt Regs	Quick invoice lookup Quick credit lookup Get register Get not approved Get approved but not paid Approve Disapprove Change payment date Pay Get regs with credit balances Vendors with credit balances Close register Open register
VenCollection	Quick memo lookup Quick invoice lookup Quick payment register lookup Get not used Get excess/not distributed Get distributions Get expected memos Reconcile expected memo Get not pre-approved Pre-approve Get pre-approved Approve Get approved Schedule Reset status back 1 Cancel credit memo
VenMultiCred	

Table 1

Base Table	(Options)
VenRecExpCred	

032151-002

Base Table	(Options)
Ven_Invoices	<p>Quick invoice lookup Quick voucher lookup Quick check lookup Search selection by date</p> <p>Verify selection Daily verification</p> <p>Get all not paid Get not reconciled Get reconciled</p> <p>Reconcile with credit</p> <p>Pre-approve Get pre-approved Remove pre-approved</p> <p>APPROVE Get approved</p> <p>Schedule payments Schedule pre-paid payments</p> <p>Close selection HOLD selection Get hold</p> <p>Reset status back 1</p> <p>Edit terms/payment/vouchers</p> <p>Integrity check</p> <p>Temporary notes</p> <p>Update invoice</p> <p>Mark ready for review</p> <p>Get ready to review Mark reviewed Get reviewed</p>

Various screen displays showing the options pop-up menu for that screen display are shown in Figure 124 through Figure 128.

Business Process—Overview

An overview of the present automated business process is shown in Figure 59. In an illustrated embodiment, the automated business process has nine entry points, designated E1-E9, at which users enter information into the system. Interaction with the system is carefully controlled and user inputs carefully qualified to ensure, to the greatest degree possible, error-free operation.

The business process is customer-driven. The first entry point E1 in the business process is Sales/RMAs. In response to a customer request, a user having responsibility for E1 enters information about the customer request into the database. If the request regards sales, the information is checked and converted to a Master Worksheet (MWS). At an entry point E2, the responsible user groups MWSs for purchasing and places orders. Information is assembled for later use in receiving (E3), installation (E4), and shipping (E5). Respective users at these entry points make entries into the database which are confirmed against the assembled Purchasing/Shipping/Receiving/Installation (PSRI) information to verify correctness.

Unlike prior art systems, the present system is based on the concept of virtual inventory. In accordance with the concept of virtual inventory, all of the goods available for purchase in all of the warehouses throughout the world are regarded as available inventory. Because the Web allows business to take place at light speed, the difference between physical inventory and no physical inventory can be merely the click of a button on a computer screen. As goods are received and shipped, these events are tracked by a virtual inventory process in which all items are presold.

Entry points E6 and E7 relate to customer and vendor payments, respectively. Assembled information is input to A/P and A/R modules. Customer pay-

ments are received and entered in conjunction with the A/P module. Vendor payments are made in conjunction with the A/R module.

A general ledger (GL) module tracks transactions and their financial implications in real time. It therefore receives information from the A/P, A/R and virtual inventory modules as well and entry points E6 and E7. Bank statement information is also input to the general ledger module at entry point E8.

The customer request, instead of being for sales, may be an RMA request. Information is then input from E1 to an RMA module. A reverse process is then executed, begun by an RMA number being communicated to the customer. In the typical case, the customer then returns merchandise authorized for return. The returned merchandise is received (entry point E3) in conjunction with the RMA module and receiving information portion of the assembled information. The RMA module communicates with the GL module so that appropriate accounting entries may be made.

The effect of the overall business process is two-fold. First, a response to the customer's input is produced and communicated back to the customer. Second, during the course of the business transaction, a wealth of historical data are accumulated that may then be subjected to factual analysis for purposes of ensuring customer satisfaction, evaluating employee performance, and evaluating vendor performance.

In the following description, the course of an order will be described within each of the domains identified in Figure 3, as follows: in the product domain, from quote to shipment, as well as return (although rather atypical, returns are nevertheless a common occurrence); in the payments domain, from invoice to payment (both customer and vendor); in the financial performance domain, from cashflow to financial statements; and finally, in the factual performance domain, from parameters such as time, quantity and dollar volume to individual and group employee performance.

Sales

As may be appreciated from the foregoing description, an order may be preceded by a quote. Quotes may be requested and orders may be placed in writing (e.g., by fax), verbally (e.g., by phone), or electronically via the Web. More generally, order information may be conveyed by electronic means (e.g., Internet, intranet, EDI, satellite, remote terminal direct-dial), human-mediated telecommunications (e.g., email, phone, fax), or by physical means (letter, visit, etc.). Regardless of the origin of the quote or order, the quote or order becomes a sales record.

A screen display that may be used to view sales records is shown in Figure 60. Quotes are each assigned a Quote number having a "Q" prefix. Orders are tracked via records referred to as "Master Work Sheets" (MWS). A Master Worksheet contains all of the vital information related to an order. As seen in Figure 60, orders are each assigned a MWS number having a MWS prefix. The screen display of Figure 60 includes a status column in which the status of each quote and order is indicated, e.g., WebSubmit, WebQuote, Purchasing, etc. The status of each record can therefore be readily ascertained and tracked.

Referring to Figure 61, the input layout of a quote is shown. During record input, the system prompts the user at every opportunity. For example, when the cursor is placed within the customer field, a list of previous customers is displayed. Assuming the customer is a repeat customer, the user can select the customer from the list. Various fields are then completed from information previously stored for that customer.

To add an item to a quote, the user clicks the "+" icon, followed by the "Go Prod" button. The Products file is then displayed, as shown in Figure 62. The Products file may contain hundred of thousands or even millions of product records of products from different vendors. When the user selects a product, the all of the relevant information for that product is transferred to the quote. To facilitate selec-

tion, the product file may be searched in various ways, e.g. by vendor, product category, etc. By searching the products file by manufacturer part number, the vendor offering the best price for a particular product may be identified.

When all items have been added, the user is asked to specify partial shipment status. The partial shipment status specifies what items, if any, can be shipped separately and what items, if any, are required to be shipped together. The user is further prompted to enter installation information and to ensure that all required cables, brackets, etc. have been ordered. In the case of computer equipment, for example, installation may involve installing a card or installing memory within a computer, loading software, etc. If installation is specified, installation charges are automatically added to the quote.

During the foregoing process, the user may enter notes within a screen 6101. This screen is displayed whenever the quote or MWS is displayed. If a quote is created on the Web, a separate notes screen is provided for customer notes. A corresponding notes screen for internal use only is provided for all quotes.

When the quote is satisfactory, the user may then save the quote by pressing the post to purchasing button.

To ensure that a quote is correct, one or more additional review stages may be required before the quote is converted to an MWS for purchasing. For example, the quote may be reviewed by "inside sales" to make sure that any compatibility requirements have been met and that, from a technical viewpoint, there are no errors in the quote. In a further review stage, the quote may be compared to a paper purchase order, if one exists, to make sure there are no discrepancies. When the quote has passed whatever level of review is required, it is then marked reviewed and converted to an MWS. The format of an MWS is shown in Figure 63.

Note that, during the foregoing process, different people may have different limited privileges. Also, throughout the foregoing process and throughout the system generally, at each information entry point, the user's input is checked for accu-

unique MWS number which is used throughout the life of a transaction to differentiate distinct purchase orders. Any unique identifier may server the same purpose, including, for example, a material code number, a purchase requisition number, etc.

If a mixed physical/virtual inventory model is followed, then a physical inventory process determines prior to purchasing whether an item is already in inventory and hence need not be purchased, at least for purposes of fulfilling the order. Items not in inventory must then be purchased. The design of a purchasing output display/user interface greatly simplifies the purchasing process. For each item to be purchased, a record is displayed including each of the foregoing pieces of information. Preferably, all of the heading allow for sorting on that heading. Furthermore, all items are selectable and may be expanded (by doubling clicking) into item details.

The user interface allows a variety of actions to be performed, including grouping items within the display, removing items from the display, cancelling or changing various aspects of an order, holding an item or splitting an item (e.g., in order to hold less than all of the items details belonging to an item), etc. In an exemplary embodiment, items may be grouped by stock status (B/O, short stock), by shipping instructions (partial shipment OK, no partial shipment), by vendor, by manufacturer, by MWSs including addendums, etc. Groups of items may be removed from the display, including any of the aforementioned grouping and install groups. An item sold (one or multiple physical items) may be removed or an item detail (a single physical item) may be removed. Cancellations and changes may be made to an item sold, an MWS, shipping method, and freight charges.

In a typical scenario, a purchaser's work might proceed in the following manner.

1. Get all unfinished and new work (all items having no order date).
2. Select a subset of items to work and remove all other items from the out-

put display.

3. Get all back ordered items and purchase them first. Eliminate related “no partial” items from the output display until the corresponding back-ordered item has been received.
4. Group items from different orders and possibly change vendor on some items to obtain quantity discounts, if possible.
5. Place order and repeat.

Various user interface buttons relate to the actual placing of a purchase order. In a telephonic transaction, purchase cost (Pcost) on an item might be negotiated downward below the sales cost (Scost). By selecting an item and clicking on the button, the purchase cost may be input in the course of placing the order. A sales confirmation number may also be input by clicking on the corresponding button. An automatically generated PO number may be assigned by clicking on button. By clicking on the button, the output display is refreshed to remove from the display items that have been ordered. Simultaneously, the system marks the ordered items as ready to receiving, thus preparing the items for receiving.

More preferably, purchase orders, instead of being placed manually, are placed electronically by linking to the seller's network of vendors. Automated purchasing may occur continuously or at regular intervals using “pull” technology, “push” technology, some combination of the two, or some other information retrieval technology or combination of technologies.

Business rules implemented by the purchasing process include the following:

1. Items cannot be ordered before a quote is converted to a MWS.
2. Duplicate orders are not allowed by item or MWS.
3. Items can only be ordered from approved vendors.
4. Purchasing can only be done by authorized personnel.
5. Purchasing notes can only be viewed by authorized personnel.

An installation, once begun, may have several possible outcomes. In the typical case, the installation will be completed successfully and the installation group may be released for shipment. In other instances, installation may be only partially completed—e.g., manufacturer technical support may be required, additional parts may be required to complete installation, or additional installation may be required for some other reason. In some instances, the appropriate action may be disinstallation, for RMA purposes or for some other reason. All of these different stages of completion are tracked within the system.

Referring to Figure 68, throughout the foregoing processes, and in particular receiving, installation and shipping, notes conveying instructions regarding specific items may be displayed by double-clicking an item to cause a item detail display to appear. Included within the item detail display are several notes boxes,

including boxes for unique installation notes, standard default notes from the customer file, unique shipping notes, standard default shipping notes from the vendor file (for RMA), RMA installation notes, receiving notes, etc.

The PSRI output display also includes an "Expedite" view, shown in Figure 69. The expedite function is to minimize delay in receipt of ordered products. Expedite actions include entering the Estimated Time of Arrival (ETA) of a product based on contact with the vendor and/or shipper and marking items in accordance with various expedite categories, as well as entering notes if necessary concerning the problem and expected solution.

In accordance with one embodiment of the invention, expedite information may be brought up from the MWS screen, as shown in Figure 70. In Figure 70, a radio button has been clicked to cause a Not Received Report to be displayed. This report shows percentage of order completion in terms of ordering, receiving and shipping, as well as the age of the order in days. Various filtering options are provided. Expedite status for each item may be entered by clicking on one of a large number of status buttons, e.g., "Urgent," "Wrong Product," etc. A Not Shipped report screen display is shown in Figure 71.

Expedite status may also be set using a more abbreviated expedite pop-up, shown in Figure 72.

As with both purchasing and receiving, preferably vendors are given access via the Web to expedite information relating to that vendor.

RMAs

Normally, the order will be successfully shipped to and received by the customer, who would then begin to use the products. In some instances, however, the product may not work as intended, the product may be lost or damaged in shipping, or the customer may change his or her mind, necessitating that a product be returned. Returns are provided for through a Return Merchandise Authorization (RMA) mechanism. The same mechanism may be used for other account adjust-

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ments other than actual returns, for example freight adjustments, etc. An RMA may also be used for warranty replacement parts. This feature, coupled with Web access, allows customer's to track replacement parts themselves without contacting a technician or service representative. A customer may request an RMA in any of the ways previously described for obtaining a quote or placing an order. When an RMA request is received, an RMA record is created. An RMA screen display is shown in Figure 73.

Referring again to Figure 63, a MWS display includes an RMA button. When this button is clicked, the user is prompted to select an item from the displayed MWS for return. An Add RMA Record screen display such as that of Figure 74 is then used to specify return type, reason, etc. A typical RMA has two "sides," the customer side and the vendor side. When the item to be returned is selected, preferably both the customer side and the vendor side are filled out by the system. Any changes may be made from a screen display such as that of Figure 75. By clicking a button, the screen display of Figure 75 allows for display of the customer side only, the vendor side only, or both sides of the transaction, as well as claims information.

A return may be made for any of a number of different reasons. Different return types are therefore defined. Depending on the return type, some RMA fields will not be applicable. Preferably, the system is provided with sufficient intelligence to automatically fill in these fields as "N/A."

As shown in Figure 76, a lookup table may be used complete various fields of an RMA record based on the selected return type. If a return is for credit, for example, then return type 1 is the corresponding return type. Depending on whether payment was by check, credit card or credit memo, different fields may be applicable. In the present example, however, the mode of payment does not affect the manner in which the RMA is completed. As noted previously, an RMA has both a customer side and a vendor side. In Figure 76 therefore, each table cell has

Referring again to Figure 77, the next two columns relate to vendor and contain the values N and N/A, respectively, indicating that the time to RMA cannot exceed the vendor's allowed maximum time duration and that the vendor's restocking fee policies are not applicable for this type of return. For a particular vendor, the vendor's specific return policies are stored in a table such as that shown in Figure 79.

Referring again to Figure 77, the next four columns relate to customer and contain the values N, N, N and N/A, respectively, indicating that the time to RMA cannot exceed the maximum time duration allowed for this customer, that there must be no restocking fee, that the sales price cannot exceed the maximum allowed for this customer, and that customer service fee policies are not applicable for this type of return. For a particular customer, specific return policies for that customer are stored in a table such as that shown in Figure 80.

If an RMA request meet all of the applicable automatic approval criteria, then it may be automatically approved, instantly, and an RMA number communicated to the customer as shown, for example, in Figure 81.

Business rules implemented by the RMA module include the following:

1. RMAs can only be created for items shipped to customer.
2. One item per RMA (quantities are OK).
3. Replacement Quotes are created by the user specifying the appropriate replacement product.
4. Generation of printed/faxed RMAs with Return packing slips for customer use.
5. Receiving can only receive items from customers with valid RMA issued.
6. Wrong or defective products automatically create RMAs.
7. Replacement MWSs can only be shipped after being released by purchasing.
8. Vendor RMAs must have vendor RMA numbers before shipping.
9. Complete control of RMA module by executive group.

One characteristic feature of the present system perhaps most evident in relation to RMAs is the display of information in a very complete way and in such a manner as to allow ready interaction. In conventional database applications,

information is presented in simple row format within an output display. Multiple levels of "drill-down" may be required to display a particular detail. Furthermore, entry or manipulation of information can typically only be performed from a separate input screen.

In the case of the present system, by contrast, as exemplified by the RMA display of Figure 73, records are presented in a very information-rich format. Entry or manipulation of information is enabled within the same screen display. In the case of RMAs, for example, a user with the proper authority is able to approve or cancel an RMA, change an RMA to a different type, release a replacement shipment, etc.

A further important feature also greatly facilitates convenient navigation and ease of use. In most systems, to display related records, a search editor is used to enter a search. In the present system, by contrast, a "related-switch" menu bar is provided within most displays. Using this related switch feature, a user may select one or more records within the output display and select a related file from a pop-up of related files. The system then searches in the related file for records related to the selected records and displays the related records in the output display format of the related file. In the case of RMAs, for example, the related switch capability may be used to switch to related customer invoices, vendor invoices, credit memos, etc. One file may be related to another file but only indirectly, through a third file. In this instance, an intermediate search is required, the results of which are not displayed. Of course, the number of intermediate files may be more than one.

Preferably, vendors are given access via the Web to RMA information pertaining to them. A vendor may then immediately provide an RMA number without requiring any human intervention.

With vendor access to purchasing information, receiving information, expedite information and RMA information pertaining to that vendor, a truly integrated supply chain results. Such an arrangement makes global commerce just as

Design Philosophy: Self-Correcting Knowledge-Based System

The knowledge base affects user interaction with the system through two different kinds of displays, a data input display and a process display. The data input display is used to actually enter data into the system. During the course of data entry at entry points E1-E9 (Figure 59), rigorous entry qualification occurs to eliminate errors. In the case of PSRI, for example, during receiving, only ordered items are allowed to be received. To cite a further example, during vendor invoice entry, described hereinafter in relation to Figure 121 through Figure 123, the system detects an attempt to enter a duplicate invoice number and prevents the duplicate from being entered. The process display is used to act on the data within the system to move an item to the next stage, and in the course of such action has the effect of changing the status of records acted upon. In the case of RMAs, for exam-

ple, the user may easily, with the click of a button, approve or cancel an RMA, issue a customer credit memo, change the N/A settings of the RMA, etc. In the case of expedite, the user may easily, with the click of a button, record the reason that a product has not been received. To cite further examples, in the case of vendor invoices and customer invoices, described hereinafter, the user may easily, with a click of a button, mark a vendor invoice for approval or cause an aging report window to be displayed for customer invoices.

The knowledge base and the application of it to data input and user actions is what makes an automated, end-to-end, sequential business process possible, by ensuring that there is only one way to get work done—the right way.

During use of the system, unanticipated circumstances are bound to arise in which the user cannot accomplish his or her task (or accomplish it as well) in a phones free, paper and pencil free manner using the current features of the system. In this event, the knowledge base of the system is then added to to solves the user's problem. In some instances, the user may be able to add to the knowledge base directly. For example, the user may wish to add a further return type by adding an entry to the table of Figure 75. Similarly, in the case of factual performance evaluation, described hereinafter, the user may choose different performance metrics or combinations of metrics to be tracked and displayed. In other instances, adding to the knowledge base may require administrative intervention. In the case of the options of Table 1 and Figure 124 through Figure 128, adding further options may require the efforts of a programmer.

Having described for an order the course of events in the product domain, the course of events in the payments domain will now be described, first in relation to sales tax and sales commissions, then in relation to customer payments and finally in relation to vendor payments.

Sales Tax and Sales Commissions

Sales tax and sales commissions are automatically computed and stored in the system based on applicable tax rates and commission rates.

In the case of sales tax, a sales tax table contains state tax rates and local tax rates. For a particular sale, the applicable tax rate is determined based on the ship-to address. Typically, preliminary tax payments are made each month and a final tax payment is made each quarter. Sales tax records are automatically added to a sales tax register (first prepayment, second prepayment, or final quarterly payment) for the appropriate period. As shown in Figure 82, the sales tax module automatically calculates the figures to be entered on each line of a sales tax return, or may be programmed to print out the actual return.

In the case of commissions, commission rates are stored within a Sales Rep file and a Sales Support file. Because each order is worked on by both outside sales and inside sales, each order will typically have two commissions. Commission records are created at the time a customer invoice is issued. Commissions are then approved and scheduled to a commission register for payment in a similar manner as accounts payable, described hereinafter. Multiple levels of commissions are provided for. A simple example of multiple commissions is where an outside salesperson responsible for customer interface is supported by an inside salesperson that reviews orders for correctness and troubleshoots the order, if necessary, during the fulfillment process. In more complex organization structures (e.g., multi-level marketing), the number of commissions may be greater than two.

Accounts Receivable

When an order is shipped, a customer invoice is automatically issued, i.e., entered into the computer system. If paper invoices are required, then at regular intervals (each day, for example) an accounts payable clerk prints out, checks and mails customer invoices issued during the preceding interval. (Alternatively, the printing and mailing of customer invoices may also be automated.) In an exemplary embodiment, invoices are issued using the "Issue invoices" option within the

customer invoice file. A customer invoice screen display is shown in Figure 83. With the passage of time from the invoice date, invoices pass from one category to another, e.g., 30 days, 60 days, 90 days, etc. At any time, the accounts payable clerk may view invoices within different categories. Also, as is the case with other output screen displays, the user is able to manipulate information and interact with the system, e.g., to analyze an account, add a comment or note, etc., all without paper and pencil.

Referring more particularly to Figure 84, from a MWS output screen display, the user can select a group of invoices and click on a collections button to cause a collections summary to appear. By further clicking on a By Customer button, the selected invoices are broken down by customer as shown in Figure 85.

When a customer payment is received, a payables clerk clicks an add record button to add a customer payment record. The clerk is then presented with a pick list of customers. The clerk selects the customer from which the payment has been received. The customer is then prompted in turn to enter the mode of payment (check, cash, etc.) and the payment date. A customer payment record such as that shown in Figure 86 is created. A payment may correspond to multiple invoices. The clerk enters from the check stub reference numbers and invoice numbers, as well as the respective amounts, for each invoice (or credit) to which the check purportedly applies. Referring to Figure 86, for example, the check #429069, as indicated on the check stub, pertains to five different items, or reference numbers, the first three of which are invoices and the last two of which (DM32890/4829 and DM32889/4695) are credits.

After the reference and invoice numbers have been entered from the check stub, the system attempts to match the entries to the corresponding invoices within the system. The clerk is prompted to enter the type of each item (e.g., invoice or credit) and the amount indicated on the check stub. The system then checks to see if the amounts indicated coincide with the expected amounts stored within the sys-

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tem and indicates each item as being reconciled or not reconciled. The clerk then saves the record, which may then be approved and posted by supervisory personnel.

Discrepancies may occur between payment amounts and invoice amounts, i.e., both overpayment and underpayment may occur. An OverUnderPay file is used to track and resolve such discrepancies. An OverUnderPay screen display is shown in Figure 87. A corresponding record detail screen display is shown in Figure 88.

Business rules implemented by the A/R module include the following:

1. Invoices will be automatically created on shipment of products to customers.
2. Items can only be invoiced once.
3. Invoices must be issued by accounting before they are valid.
4. EDI invoices are provided for. EDI invoices will automatically be sent via EDI.
5. EDI invoices PID numbers must match PO PID numbers in the EDI file.
6. Customer invoice numbers indicated on the check stub must match with existing customer invoice numbers in the system. The amounts must correspond, else an overpay/underpay records is created as described above.

Accounts Payable

The accounts payable module is designed to ensure that invoices are timely paid but to prevent double payment, overpayment, etc., and to systematically resolve problems with invoices so that they may be paid. The payment policy may be more or less aggressive. On the aggressive side, for example, the system may provide that a vendor invoice is paid only after a corresponding customer payment has been received, thereby assuring a stable cash flow.

A vendor invoice screen display is shown in Figure 89. When vendor

invoices are received, they are entered within a grid such as that of Figure 90. The invoice number and PO number are entered manually from the invoice. The payee and vendor are preferably selected from pick lists. The invoice date, total billed, tax and freight are entered manually from the invoice. For each entry within the Add Invoices screen, a vendor invoice such as that of Figure 91 is created. Based on the PO number, the system displays items sold from the MWS (with or without addendum, or possibly even multiple addendums) to which the invoice pertains.

The vendor payment process begins by an accounts payable clerk invoking a Daily Vendor Verification option. Referring to Figure 92, this option identifies all of the open vendor invoices and runs them through a "sieve" to determine which invoices are "clean," i.e., fully reconciled, and which invoices are not clean, i.e., have discrepancies. Within each the categories clean and not clean, there are numerous sub-categories arranged in order from most important to least important. A given clean invoice may in fact fall within several sub-categories, but is categorized at any given time into the highest sub-category to which it belongs. Similarly, a given invoice that is not clean is categorized at any given time into the highest sub-category to which it belongs. By double clicking on a particular category, invoices belonging to that category are displayed. Typically, the payables clerk will pre-approve clean invoices for approval by supervisory personnel having authority to approve payment. Invoices that have been approved are then scheduled by the payables clerk to a payment register, an example of which is shown in Figure 93, for payment in accordance with their respective due dates.

For invoices that are not clean, the payables clerk displays invoices from the highest sub-category, investigates each invoice and attempts to fix the particular discrepancy involved with that sub-category. The same approach is followed with the invoices of each sub-category in turn. The verification is then re-run. Some invoices may have become clean, whereas other invoices may have passed to a next-lower sub-category but may still not be clean.

Referring again to Figure 90, prior to entering invoices, the user is prompted as to which type of invoices to be entered, including as one possibility freight bills. When a freight bill is entered, the user enters the invoice number, PO number, and payee (the latter from a pick list), and instead of a vendor list, picks a carrier from a carrier list. The user is then prompted to enter a date range specifying a period to which the freight bill pertains (Figure 94). Shipping records are then searched, and freight charges for shipments with the specified carrier during the specified period are totalled. Invoice entry is then completed in the usual manner. If the invoice amount entered from the invoice equals the expected total charges, then the resulting invoice record is marked reconciled. If not, then the invoice record is marked not reconciled.

Qualification of user inputs, previously described, occurs at each entry point E1-E9 of Figure 59 but is most readily illustrated with respect to invoice entry. Figure 121, Figure 122 and Figure 123, respectively, illustrate various warning dialogs used to prevent entry of erroneous data. If entry of a duplicate invoice number is attempted, for example, a dialog such as that of Figure 121 is displayed, and the system refuses to permit the duplicate entry. If an attempt is made to enter the same invoice twice during an entry session, then a dialog such as that of Figure 122 is displayed. If the system detects that the same invoice number has been used previously but with respect to an apparently different vendor, then the user is notified (Figure 123) and may choose whether or not to proceed.

Business rules implemented by the AP module include the following:

1. Items can only be billed once by a vendor.
2. Vendor invoices must reconcile with purchasing costs and terms (freight, tax, payment dates, etc.).
3. No duplicate vendor invoices are allowed. A vendor invoice is identified by a combination of vendor invoice number and MWS number. Hence, the same vendor invoice number may be billed against different MWS

Nightly or Periodic System Update

General Ledger and Real-time Financials

The most “tasking task” for most small- and medium-sized business is accounting. Accounting packages typically come in one of two flavors, packages for non-accountants that mask the complexity of generally-accepted accounting principles (GAAP) but do not provide information in “accountant-ready” form, and packages for accountants that are not readily understood or used by non-accountants. The need for real accounting documents coupled with the difficulty of producing them has necessitated considerable reliance on accountants, either outside accountants or full-time paid staff. If an outside accountant is used, the accountant brings the books up-to-date only at intervals. Even in the case of full-time paid staff accountants, the books are typically brought up to date only monthly, or at most weekly, because of the arduousness of the process. Typically, invoices are reviewed and confirmed, then manually posted, then a trial balance is run, adjustments are made, etc.

Accounting information is presented in the form of financial statements.

Information about each item appearing on the financial statements is gathered in an account. An account exist for each asset, liability, revenue, expense, and category of owner's equity of a company. More particularly, the classic accounting process involves the following steps:

1. Analyzing business and financial transaction to determine if they affect accounts;
2. Journalizing transactions affecting the accounts;
3. Posting journal entries to accounts;
4. Determining the balance in each account using incoming bank statements;
5. Preparing a total of all the account balances, called a trial balance;
6. Determining whether any adjusting entries are necessary and journalizing and posting such adjusting entries;
7. Preparing financial statements;
8. Closing income statement accounts and establishing ending balances for use in the next accounting cycle.

In classic accounting practice, the effects of a transaction are not recorded directly into the accounts. Rather, they are recorded in a journal entry in a general journal, or general ledger (GL). The process of transferring the information from the journal entry to the accounts is called posting. At the end of the fiscal period, before making any adjusting entries, an accountant prepares a schedule listing all the individual account titles and their respective debit or credit balances. Following the trial balance, various adjusting entries may be required to assure that revenues are reported in the period they were realized and that all expenses are matched with the revenues they produced. An adjusted trial balance is then produced. Financial statements are generally prepared on worksheets from the adjusted trial balance. Whereas balance sheet accounts are permanent (or real) accounts, income statement accounts are temporary (or nominal) accounts. Because the data collected in

an income statement account is only for the current fiscal period, the balance is not carried forward but is eliminated at the end of each fiscal period. The process of eliminating the balance in each of the revenue and expense accounts (by transferring the balance to a different permanent account) is called closing the accounts.

As a result of the cumbersomeness of the foregoing process, management processes accommodate the limited availability of accounting-derived management information. In reality, however, the need for management information is constant and ongoing, and cannot be expected to synchronize itself to the availability of accounting information without sacrificing performance.

The present software takes a different approach to financial performance activity. Instead of manual posting of accounting entries, posting is automatic, either continuous or at user-specified intervals (e.g., nightly). For non-accountants, the complexities of accounting are hidden completely—users simply go about their usual activities of running the business. The automatic posting process, however, generates entries in GAAP format. Furthermore, instead of a limited number of “canned” reports, a GUI-based report-writer is provided that allows any kind of report to readily generated, either on command or on schedule. At any time, a user may simply press a button and obtain a real-time, accurate financial report.

Because posting is automatic, posted entries are not guaranteed to be correct. (Because of the stringent qualification of user entries, however, errors are greatly minimized.) Therefore, unlike conventional accounting packages, entries are allowed to be modified. In the case of invoices, for example, invoices are allowed to be modified up until the time they are paid. As invoices and other records are viewed and modified, they are flagged to be checked by a centralized GL module to determine if the modification requires an adjusting entry. If so, the adjusting entry is made automatically alongside the original entry.

Although in an exemplary embodiment the GL module is a centralized module, the functionality of the GL module may be distributed among the various

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modules so as to operate continuously. For example, an AR portion of the GL functionality would make general ledger entries immediately to reflect payment information as it is input, a purchasing portion would make general ledger entries immediately to reflect obligations as incurred through purchase orders, etc.

To use the real-time financial capabilities of the present system, the user sets up accounts, then assigns accounts to different line items of records within the system. More than one account may be assigned to a line item. If only one account (i.e., a single default account) is assigned to a line item and an automatic posting option is selected, then the line item is automatically posted to that account. Default accounts are set up for various different files, such as AP, AR, cash, credit card transactions, commissions, payroll, etc., as shown in Figure 95. The manner in which these defaults are established will be described.

Accounts are set up within a chart of accounts. The chart of accounts keeps a record of each account including the name of the account, type of account, account code, etc. To add an account, the user enters information about the account within an entry screen such as that of Figure 96. Whereas debits and credits are intelligible primarily to accountants, increasing and decreasing a balance are concepts easily understood by non-accountants. Hence, when an account is first established, a button is selected designating whether the account balance is increased by a debit or by a credit. Thereafter, user may use the more familiar concepts of increase and decrease. An exemplary chart of accounts display is shown in Figure 97. Doubling clicking on a particular account results in a display such as that of Figure 98. The date of each transaction contributing to the balance is shown, together with an explanation, the journal reference number, and the amount. This screen display may be used to modify account information as necessary.

For accounts receivable, a correspondence between line items on a customer invoice and specific accounts is set up through a customer setup display, shown in Figure 99. Generally speaking, each of the different list boxes corre-

sponds to an amount that is (or is derivable from) a line item (or multiple line items) on the customer invoice or other record. The account or possible accounts to which the amount is to be or may be posted are specified by clicking the "+" button and selecting from a pop-up list of accounts of the appropriate type. If multiple accounts are selected, one may be selected as a default account, the effect of which is explained hereinafter. If for each list box only a single account is selected and is designated as the default account (using the Set Def button), then posting is automatic and is performed on a continuous basis or at regular intervals (e.g., daily). As a result, a truly up-to-date financial report can be run at any time.

Referring to Figure 100, an accounts receivable display is shown in accordance with an exemplary embodiment of the invention. For each customer account, there is shown the GL account to which balances are posted, the current account balance, and amounts 30, 60, and 90 days overdue, respectively. By double-clicking on a balance field, transactions records relating to that balance field are displayed. For example, double-clicking on the current balance of \$2,712.75 shown in Figure 100 results in a display such as that of Figure 101. The date of each transaction contributing to the balance is shown, together with an explanation, the journal reference number, and the amount.

Corresponding screen displays for accounts payable as those of Figure 99, Figure 100 and Figure 101 for accounts receivable are shown in Figure 102, Figure 103 and Figure 104, respectively.

If the setup of accounts indicates that an amount may be posted to more than one account, then manual account distribution is required. Referring to Figure 105, a pop-up screen display used for this purpose is shown. The assigned accounts are displayed, and the user enters debits or credits for the accounts as appropriate. The effect of a debit or credit (increase or decrease in the account) is displayed as an aid to the novice user.

Referring to Figure 106, a general journal display is shown in accordance

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with an exemplary embodiment of the invention. For each transaction there is displayed a journal reference number, account titles and explanation, and posting reference to the account codes of the accounts debited or credited as result of the transaction. Doubling-clicking on a particular account results in a display such as that of Figure 107. The date of each transaction contributing to the balance is shown, together with an explanation, the journal reference number, and the amount.

As a result of the continuous, automatic posting activity described, once a financial report has been defined, it may be run at any time (or at scheduled times) and is assured to be up-to-date. Moreover, it is verifiable, i.e., every supporting transaction may be readily retrieved and viewed. In an exemplary embodiment, a financial report is defined using a display screen such as that of Figure 108. The display follows a familiar spread-sheet-like format. For each line of the report, a line item description is entered. Then, in the appropriate column, the user enters either an account (by selecting from the chart of accounts pop-up), a calculation formula, or even the result of another report. When a report is run that requires the result of another report, that other report is run first. An actual report generated using the report definition of Figure 108 is shown in Figure 109.

A report, instead of being the line-time type of Figure 109, may be a trend analysis report. Trend analysis provides a powerful tool for understanding inter-relationships between various aspects of a business. Referring to Figure 110, a trend analysis report is defined in similar manner as an ordinary financial report. A cell is selected and the user is prompted as to whether the cell contents is to be a local balance, a linked field (from another report), or a calculated field. In the illustrated example, local balance is selected, and the user selects an account from the chart of accounts pop-up, in this instance Cash in Bank #1. To investigate the inter-relation of different accounts, a further account would then be selected, say Trade Accounts Payable. Plot labels may be entered by the user that differ from the

actual names of the accounts themselves. Referring to Figure 111, a trend frequency is then selected. In the example of Figure 111, the trend frequency has been set to daily. The trend analysis is then run and the raw data displayed as shown in Figure 112. Referring to Figure 113, various graphing options are provided. In the illustrated example, the data is presented in the form of line graphs.

Trend reports, aside from comparing one account to another over the identical period, may also compare the same account over different periods. Hence, in the case of both financial reports and trend analyses, an important feature is that the date range of the report is arbitrary. Historical data for all past periods (or at least a considerable number of past periods) is stored in the database, enabling reports to be run for any period of time, not just the current period.

Human, Group and Organization Performance

Having described for an order the course of events in the financial performance domain, the course of events in the personnel domain will now be described.

Referring to Figure 114, there is shown a human resource infrastructure for a virtual organization performance evaluation model. All company personnel are linked to a digital "HR backbone," including operational management (V.P.s, managers), engineering, strategic management (president), financial and legal personnel (CPA, lawyer), and staff within various departments (customer service, shipping/receiving, technical, accounting, purchasing, etc.). In concept, the HR backbone could be any information conduit. In an exemplary embodiment, the HR backbone is realized by the same integrated, Web-enabled, client/server database as described heretofore. Various functional blocks manipulate data stored within the database and form a personnel module.

Two functional blocks in particular form the basis for performance evaluation, a Measurement Factors block and a Score Keeper block. For each individual whose performance is to be tracked, a list of tasks performed by the individual is

compiled, together with an estimate of what percentage of the individual's overall assignment each particular task constitutes. Using this information, the individual participates in the setting of realistic goals within various categories. These goals are stored so as to readily accessible to the individual for frequent review. The goals in turn dictate measurement factors/parameters tracked by the "descriptive" Measurement Factors block. These factors/parameters form the answer to the question "What is the pertinent data within the database upon which to evaluate the performance of the individual?," both individually and as a team player. Suggestions received from within the organization may influence the pertinent measurement factors/parameters.

The question, "How should the data be viewed?" is answered by a group of "normative" functional blocks. These blocks generate outputs to the Score Keeper block, which measures the degree of success or failure with respect to each goal. The same outputs are input to a "presentation" block that serves to educate employees as to the effects of various normative performance measures on financial performance and on factors affecting customer satisfaction, to help employees identify trends, etc.

Customer feedback (both commendations and complaints) are preferably also be received by and input to the system. A firewall provides security for internal data and allows limited access by customers to provide feedback. Customer feedback, although not strictly objective like the other factual measures of performance tracked by the database, can be an important indicator of performance.

Referring to Figure 115, a more detailed view is shown of the kinds of data stored in the human resources portion of the database. With the exception of data relating to performance measurement factual review, the data represented in Figure 115 is static or semi-static data that changes relatively infrequently or not at all. The top portion of the figure relates to candidate data, whereas the bottom portion of the figure relates to employee data.

For candidates, data stored in the database includes personal data, previous employment data, and previous performance data. The data is obtained from the candidate and from other outside sources, and may also be made available to the candidate, e.g., through the Web. During the hiring process, employment documents are scanned (or input directly by the candidate during the application process) into the database. For employees, data stored in the database also includes personal data, employment data and performance data. In addition, for employees, data regarding achievements and special recognition is stored.

Performance measurement factual review is dynamic in nature and may be performed in a manner illustrated in Figure 116. Depending on the organizational level, performance measurement is either financial-oriented or assignment oriented. For branches, divisions, subsidiary companies and their parent company, for example, performance measurement is financial-oriented and uses financial analysis algorithms. In particular, using the universal financial report generator described previously, any desired financial ratio may be tracked, as well as any arbitrary combination of account codes in order to discover relationships. Cash flow statements and budget analyses may also be generated. Based on this information financial performance goals may be set and contributing goals may be accurately derived.

At the department, group and employee level, performance measurement is assignment oriented.

Referring to Figure 116, evaluation of human performance is made possible by collecting an assemblage of activity data to which analysis algorithms may be applied. This assemblage of activity data is referred to as Algorithm of Activity Data. For each different assignment (e.g., Quotes, MWSs, Customer Invoices, etc.), activity is tracked in three principal ways: quantity per period, dollar volume by period, and time between stages of completion (e.g., time from posting of quote to conversion to MWS). The relevant period is preferably user-selectable. In addition,

the responsible department and the upstream and downstream departments that affect and are affected by the assignment are identified (and refined, if necessary, as experience with the system is gained). RMAs affect all assignments and are therefore tracked in relation to each assignment. For example, quotes made during a period may total one million dollars but may have ultimately resulted in half a million dollars of RMAs.

The Algorithm of Activity Data serves as a foundation for human performance evaluation. Referring to Figure 117, for each individual employee to be evaluated, various metrics from the Algorithm of Activity Data are chosen and tracked for that employee, resulting in Employee Specific Task/Assignment Activity Data. Different aspects (e.g, quantity, dollar volume, completion times) of an assignment (e.g, Quotes, MWSs, Customer Invoices) may be chosen as metric for evaluation for a particular employee.

The Factual Performance Analysis Measurement process performs calculation on the Employee Specific Task/Assignment Activity Data, for example calculating time "deltas" between different stages of completion of an assignment. Resulting data is supplied to at least three destinations: a Measuring Algorithm, a Historical Data Comparison Algorithm, and an output display structure, indicated by dashed lines. The Measuring Algorithm compares actual performance to desired performance established by goals. Preferably, goals are set by employees in consultation with management. In an exemplary embodiment, the Measuring Algorithm compares actual performance to desired performance in three different categories: routine assignments (daily, on-going), scheduled tasks (not on-going) and special projects (typically short-lived). In addition, unique date-independent measurements may be programmed, for example as alerts. For example, the user may program the Measuring Algorithm to alert the user whenever the time delta between creation of a quote and posting of the quote is seven days or greater. Various priorities may be established in accordance with corresponding parameters.

For example, a particular order may be marked as critical, causing an alert to be displayed if there is any slippage in schedule.

The Historical Data Comparison Algorithm archives the daily output of the Factual Performance Analysis Measurement and the Measuring Algorithm blocks and allows for comparison of performance data for different dates.

Within the output display structure, a hierarchy of views is presented. A first view is a complete list, based on the Algorithm of Activity Data, of departments and the tasks and projects for which they are responsible. From this complete list, the user may create the users own "short list" of departments for performance review. Different layers of management, for example, may have different departments within their scope of review.

To display performance data, the user selects a department, causing performance data to be displayed for the department as a whole. The user may further select a specific individual within that department, in which case a Dynamic Personal Tracking view is displayed. The Dynamic Personal Tracking view displays all of the chosen metrics for the selected employee. From the Dynamic Personal Tracking view, the user may transition to a Factual Performance Display. The Factual Performance Display is a subset of the Dynamic Personal Tracking view and focuses on those metrics presently deemed by the user to be most important (e.g., metrics related to sales growth, metrics related to customer service, etc.)

The Factual Performance Display highlights strengths and weaknesses of the employee and is linked, either automatically or manually, to static human resources "personal growth guides." Based on the Factual Performance Display, it may be evident, for example, that the employee in question needs training in a certain area. In this manner, the system allows training efforts to be narrowly targeted where they will obtain greatest benefit. A career path may be charted for each employee that is calculated to maximize that employee's potential.

Screen displays used for factual performance evaluation in accordance with

an exemplary embodiment of the invention are shown in Figure 118, Figure 119 and Figure 120, respectively. Selection of an employee is accomplished as illustrated in Figure 118. Referring to Figure 119, performance results may be viewed for a single period or multiple periods, with the period being user selectable (a day, a week, a month, a quarter, etc.). In the case of the single period display, performance results for various performance metrics in different categories and sub-categories are displayed, for example: Productivity (A), including quantity per period (A1), dollar volume per period (A2) and percent profit per period (A3); Quality (B), including timeliness (B1) and customer credit memos (B2); and Profitability (C). In the case of the multi-period display, the same information is viewable for multiple periods but, because of display constraints, not all of the information at the same time. Rather the user selects the categories and sub-categories of interest for viewing at any particular time. For example, if sub-category A2 is selected, then dollar volume per period is displayed for all of the periods (e.g., six).

It will be appreciated by those of ordinary skill in the art that the invention can be embodied in other specific forms without departing from the spirit or essential character thereof. The presently disclosed embodiments are therefore considered in all respects to be illustrative and not restrictive. The scope of the invention is indicated by the appended claims rather than the foregoing description, and all changes which come within the meaning and range of equivalents thereof are intended to be embraced therein.

What is claimed is:

1. An automated end-to-end business process for product sales that uses a relational database management system, the process comprising the steps of:

a first user inputting a sales record to the database for an order of a customer;

automatically generating a customer invoice;

a second user inputting a customer payment record to the database, wherein system privileges of the first user and the second user are at least partially mutually exclusive;

automatically determining a status of the customer payment as reconciled or not reconciled; and

during each of the foregoing inputting steps, qualifying user inputs using experiential constraints, based on the then-current state of the database as a whole.

2. The method of Claim 1, wherein the process uses a single database described by a single database schema.

3. The method of Claim 1, wherein the business process is based on a virtual-inventory model for the sale of tangible goods, the process comprising the further steps of:

a third user placing a purchase order for goods in accordance with the sales record and inputting purchasing information to the database;

automatically generating a vendor invoice record; and

a fourth user receiving the goods.

VIC 1.2 4. The method of Claim 3, comprising the further step of, during the inputting of purchasing information, qualifying user inputs using experiential constraints, based on the then-current state of the database as a whole.

4. 5. The method of Claim 3, wherein system privileges of the first, second, third and fourth users are at least partially mutually exclusive.

1.2 6. The method of Claim 3, wherein the database contains a Sales Record file, a related Items Sold file containing a single consolidated record for a quantity of multiple identical items, and a related Item Details file containing a separate record for each separate item of said quantity, wherein receiving the goods comprises:

automatically determining a group of Sales Records having Items Sold not yet fully received;

selecting within the database a Sales Record from said group of Sales Records and selecting from the Sales Record a related Items Sold record; and

for each separate item of said quantity, inputting a serial number from an item of the physical goods into a field within a separate Item Details record.

7. The method of Claim 3, wherein the at least some of the goods require assembly or installation, the process comprising the further steps of:

during order entry, the first user inputting installation instructions and identifying items required to be shipped together to the customer.

VIC 1.2 8. The method of Claim 7, comprising the further step of, during the inputting of installation instructions, qualifying user inputs using experiential constraints, based on the then-current state of the database as a whole.

9. The method of Claim 7, comprising the further step of automatically adding to the customer invoice an installation charge.

10. The method of Claim 7, comprising the further step of, when an item together with any other item required to be shipped together with it to the customer have been received, automatically generating at least one of a shipping worksheet and a packing slip.

11. The method of Claim 3, comprising the further steps of:
inputting to the database actual vendor invoice information; and
automatically determining a status of the vendor invoice as reconciled or not reconciled.

12. The method of Claim 11, comprising the further step of automatically determining a detailed status of non-reconciled vendor invoices in accordance with a plurality of categories of discrepancies.

13. The method of Claim 12, wherein a vendor invoice may belong to a plurality of categories of discrepancies, the method comprising the further step of sorting vendor invoices in accordance with a hierarchy of discrepancies such that a vendor invoice having both a discrepancy higher in the hierarchy and a discrepancy lower in the hierarchy is sorted into a group of vendor invoices belonging to the discrepancy of the higher category.

14. The method of Claim 13, comprising the further steps of:
for a non-reconciled vendor invoice, inputting to the database a Vendor Expected Credit record;
offsetting an amount of the Vendor Expected Credit against the non-reconciled vendor invoice; and
changing the status of the non-reconciled vendor invoice to recon-

ciled.

15. The method of Claim 1, comprising the further steps of:
at intervals, performing a suite of database checks using experiential constraints;

detecting a condition requiring user attention;

identifying a user responsible for attending to the condition; and

automatically reporting the condition to the identified user.

16. The method of Claim 15, comprising the further steps of:

detecting an error;

troubleshooting the error; and

adding to the system an additional experiential constraint to prevent future occurrences of the error.

17. The method of Claim 1, comprising the further step of inputting to the database a Return Merchandise Authorization record relating to a sales record, the Return Merchandise Authorization record specifying one of a plurality of return types.

18. The method of Claim 17, wherein return types includes a plurality of the following types: credit, replacement, and warranty.

19. The method of Claim 17, comprising the further step of automatically completing selected fields of the Return Merchandise Authorization record as being not applicable in accordance with the specified return type.

20. The method of Claim 17, comprising the further step of automatically grouping a sales record to which the Return Merchandise Authorization pertains with sales records having one or more items to be received.

21. The method of Claim 20, comprising the further steps of:
receiving a returned item; and
automatically generating a credit memo for said returned item.
22. The method of Claim 1, comprising the further steps of:
receiving a Return Merchandise Authorization request via a global computer network, the request specifying return type;
evaluating the request based on a plurality of stored criteria in accordance with the return type; and
if the applicable criteria are met, automatically assigning, and communicating to a user via the global computer network, a return authorization number.
23. The method of Claim 1, wherein the sales record includes a ship-to address, the process comprising the further steps of:
automatically retrieving an applicable sales tax rate based on the ship-to address and generating a sales tax record; and
from a multiplicity of sales tax records pertaining to a tax reporting period, automatically generating a tax return.
24. The method of Claim 1, wherein the sales record identifies a sales representative, the process comprising the further steps of:
automatically retrieving an applicable commission rate based on the sales representative; and
from a multiplicity of sales records pertaining to a pay period, automatically generating a commission total for each of a plurality of sales representatives.
25. The method of Claim 1, comprising the further steps of:
identifying multiple persons each having a role in a sales transac-

tions; and

computing separate commissions for each of said multiple persons.

26. The method of Claim 1, comprising the further steps of:

at periodic intervals automatically posting general ledger accounting entries for transactions posted since the previous interval, including sales and customer payments; and

at a time determined by a user, automatically generating a financial statement indicative of at least one of profit/loss and cashflow.

27. The method of Claim 26, wherein said periodic intervals are user-scheduled.

28. The method of Claim 26, wherein said time is scheduled by the user in advance.

29. The method of Claim 26, wherein said time is any time at which the user inputs a predetermined command.

30. The method of Claim 1, comprising the further steps of, for each of said first user and said second user:

determining performance measurements quantifiable using data stored within the single database; and

automatically calculating and maintaining a history of said performance measurements.

31. The method of Claim 1, wherein sales record information is accessible remotely via a global computer network by authorized users.

32. The method of Claim 1, wherein customer invoice information is accessible remotely via a global computer network by authorized users.

33. The method of Claim 32, comprising the further step of displaying for an open invoice detailed payment status information.

34. The method of Claim 1, wherein vendor invoice information is accessible remotely via a global computer network by authorized users.

35. The method of Claim 32, comprising the further step of displaying for an open invoice detailed payment status information including a reason for non-payment.

36. A method of integrating business automation across multiple business domains and automatically reflecting automated business activities of one business domain within another business domain, the method comprising the steps of:

providing a Web-enabled, client/server relational database management system storing a database described by a single database schema including files belonging to each of a first business domain dealing with products and a second business domain dealing with payments; and

a user making modifications to a record within a file belonging to the first business domain, the database management system in response thereto automatically reflecting said modifications within files belonging to the second business domain.

37. The method of Claim 36, wherein the database further includes files belonging to a third business domain dealing with financial performance, the database management system, in response to a user making modifications to a record within a file belonging to one of the first and second business domains, automatically reflecting said modifications within a file belong to the third business domain.

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38. The method of Claim 37, wherein the database further includes files belonging to a fourth business domain dealing with personnel, wherein the database management system automatically alters a record of an employee or contractor having responsibilities within one or more of said first, second and third business domains by referencing records within files belong to said one or more of said first, second and third business domains.

36 - 39. The method of Claim 36, comprising the further step of, at regular intervals, performing cross-checks between records of files belonging to different business domains.

40. The method of Claim 39, wherein said cross-checks are performed during a nightly update routine.

36 - 41. The method of Claim 36, comprising the further step of establishing and enforcing a division of responsibilities between different users of the database management system.

42. The method of Claim 41, wherein each user within a group of users is assigned to a single business domain and is allowed to change only records of files belonging to that business domain.

43. A method of business-to-business Web commerce between a first business acting as supplier and a second business acting as purchaser, using a computer net including a relational database server, the method comprising the steps of:

storing user privileges for a plurality of user authorized by the purchaser to act on its behalf;

authenticating and determining a privilege level of a user;

the user entering product parameters;

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identifying products in accordance with the product parameters and displaying product information for the products;

the user selecting at least one product from the displayed product information and requesting a price quote for the product;

producing and displaying a price quote for the product, the price quote including a quote number; and

storing the price quote within the database for future reference.

44. The method of Claim 43, wherein the process uses a single database described by a single database schema.

45. In a system for business-to-business Web commerce system between a first business acting as supplier and a second business acting as purchaser, using a computer net including a relational database server, a method of maintaining and updating a multi-vendor product list, comprising the steps of:

a user selecting a baseline vendor;

electronically retrieving product information from the baseline vendor;

electronically retrieving product information from at least one additional vendor;

comparing product information from said additional vendor with product information from the baseline vendor; and

if an identical product is offered by both the baseline vendor and said additional vendor, consolidating information from both the baseline vendor and the additional vendor into a common record for display.

46. The method of Claim 45, wherein the process uses a single database described by a single database schema.

00956327 071600

47. A method of business-to-business Web commerce between a first business acting as supplier and a second business acting as purchaser, using a computer net including a relational database server, the method providing for merchandise returns, comprising the steps of:

storing in the database a record for each item sold;

authenticating a user;

the user entering information identifying at least one item of merchandise to be returned;

creating a return record and notifying a representative authorized by the supplier to approve returns;

approving the return and assigning a Return Merchandise Authorization number to the return record; and

communicating to the user the Return Merchandise Authorization number.

48. The method of Claim 47, wherein the process uses a single database described by a single database schema.

49. The method of Claim 47, wherein communicating comprises sending to the user an electronic message including the Return Merchandise Authorization number.

50. In a system for business-to-business Web commerce system between a first business acting as supplier and a second business acting as purchaser, using a computer net including a relational database server, a method of tracking financial information on a real-time basis and automatically generating a general ledger of accounts, the method comprising the steps of:

automatically posting transactions by making corresponding general ledger entries continuously or at programmed intervals; and

automatically posting adjusting entries when records pertaining to transactions that have already been posted are modified.

51. The method of Claim 50, wherein the process uses a single database described by a single database schema.

52. In a system for business-to-business Web commerce system between a first business acting as supplier and a second business acting as purchaser, using a computer net including a relational database server, a method of processing accounts, the method comprising the steps of:

storing in the database customer invoices and vendor invoices;
identifying open vendor invoices;
applying a set of rules to the open vendor invoices and related records;
forming a determination based on the set of rules whether or not a particular open invoice should be paid; and
if the determination is that the particular open vendor invoice should be paid, electronically reminding a representative of the supplier accordingly.

53. The method of Claim 52, wherein the process uses a single database described by a single database schema.

54. In a system for business-to-business Web commerce system between a first business acting as supplier and a second business acting as purchaser, using a computer net including a relational database server, a method of employee evaluation comprising the steps of:

collecting activity information and storing it in the database;
determining a data-based standard of performance for a particular employee; and

automatically producing an electronic employee evaluation report based on the activity information and the standard of performance.

55. The method of Claim 54, wherein the process uses a single database described by a single database schema.

56. The method of Claim 54, comprising the further step of communicating via a global computer network the electronic employee evaluation report via a global computer network to at least one of the employee to whom the electronic employee evaluation report pertains and authorized supervisory personnel.

57. In a relational database system, a method of displaying information, comprising the steps of:

for each of a plurality of base tables, identifying at least one related table;

providing a related switch GUI control displayed in conjunction with display of each of said plurality of base tables, for selecting a related table;

displaying records of one of said plurality of base tables;

a user selecting at least one record;

using said GUI control, said user selecting a related table;

performing a search to identify records in the related table that are related to said at least one record; and

displaying records of said related table identified by said search.

58. In a relational database business automation system, a method of displaying information so as to facilitate user manipulation and interaction, comprising the steps of:

producing an information-rich display of complex database records each comprising multiple lines of text and pertaining to both a first party to

RMA.

[illegible]

61. The method of Claim 59, comprising the further step of preparing records of ordered items so that the ordered items can be received.
62. The method of Claim 61, comprising the further steps of:
receiving ordered items and changing item records to reflect receipt; and
preparing records of received items for installation.
63. The method of Claim 62, comprising the further steps of:
installing received items; and
preparing records of installed items for shipping.
64. The method of Claim 63, comprising the further steps of:
shipping installed items; and
changing item records to reflect shipment.
65. A method of handling sales returns over a global computer network, comprising the steps of:
receiving a Return Merchandise Authorization request via a global computer network, the request specifying return type;
evaluating the request based on a plurality of stored criteria in accordance with the return type; and
if the applicable criteria are met, automatically assigning, and communicating to a user via the global computer network, a return authorization number.

66. The method of Claim 62, wherein placing the vendor order comprises communicating corresponding vendor order information to the appropriate vendor via a global computer network.

67. In a business-to-business automated Web commerce system, a security method for preventing unauthorized purchases, comprising the steps of:

for each of a plurality of customer companies, storing for at least one customer user authorization information including a first plurality of parameters, together with information about the scope of the authority of that user, including a second plurality of parameters;

each time customer access to the system is attempted, disallowing access unless valid name and password information is received; and

a customer user having accessed the system, each time particular actions are attempted, disallowing the action unless the action is within the scope of authority of the user.

68. The method of Claim 67, wherein the first plurality of parameters and the second plurality of parameters are customizable.

69. The method of Claim 67, wherein said first plurality of parameters includes user names and password.

70. The method of Claim 67, wherein said second plurality of parameters includes whether that user is authorized to purchase.

71. The method of Claim 70, wherein said second plurality of parameters includes a purchase amount limit.

72. The method of Claim 67, wherein the particular actions include purchasing.

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73. The method of Claim 67, comprising the further step of storing for each of a plurality of internal users a limited privilege level limiting that user's ability to alter information stored within the system.

74. The method of Claim 73, wherein only trusted users are assigned a privilege level that allows changing said authorization information.

75. In a business-to-business automated Web commerce system, a method of specifying complex installation instruction regarding a plurality of purchase items using a graphical user interface, the method comprising the steps of:

selecting a first primary item;

selecting one or more secondary items to be installed with said first primary item;

selecting a second primary item; and

selecting one or more secondary items to be installed with said first primary item.

76. An automated business process for product sales that uses a Web-enabled relational database management system to automate an integrated supply chain including a seller and a plurality of vendors, the process comprising the steps of:

a seller placing vendor orders and entering order information into the database, the orders being communicated to the vendors through a global computer network;

the seller receiving the orders in whole or in part and entering receiving information into the database;

the vendors accessing receiving information through the global computer network to ensure prompt receipt of orders;

the seller requesting return of selected order items; and

the vendors accessing return information through the global computer network and in response thereto communicating return merchandise authorization numbers to the seller through the global computer network.

77. The method of Claim 76, wherein the process uses a single database described by a single database schema.

78. The method of Claim 76, comprising the further steps of:
customers placing customer orders with the seller through the global computer network; and
customers accessing order tracking information through the global computer network.

79. The method of Claim 78, comprising the further step of customers and vendors accessing invoice information through the global computer network.

80. A method of replacement parts order fulfillment, comprising the steps of:
placing an order for a replacement part;
entering the order within a Web-enabled relational database system;
tracking each significant event in the order fulfillment process within the relational database system; and
allowing a plurality of different parties to view the order status via the Web.

81. A method of automating an end-to-end business process using a software program running on a relational database system, comprising the steps of:
as data is entered into the relational database system, qualifying data entries in accordance with a stored knowledge base;
displaying data together with GUI controls in such as way as to

allow a user to readily change the status of a record within the relational database system in way determined by the stored knowledge base;

and users, based on their experience using the software program, altering the stored knowledge base so as to increase the stored knowledge base.

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ABSTRACT OF THE DISCLOSURE

A software system business-to-business Web commerce (Web business, or e-business) and automates to the greatest degree possible, in a unified and synergistic fashion and using best proven business practices, the various aspects of running a successful and profitable business. Web business and business automation are both greatly facilitated using a computing model based on a single integrated database management system (DBMS) that is either Web-enabled or provided with a Web front-end. The Web provides a window into a "seamless" end-to-end internal business process. The effect of such integration on the business cycle is profound, allowing the sale of virtually anything in a transactional context (goods, services, insurance, subscriptions, etc.) to be drastically streamlined. In the case of a just-in-time product reseller, for example, a comprehensive product list is updated electronically in real time or at regular intervals from various sources. A graphical Web interface allows a user to obtain a quote based on the product list. The quote is assigned a quote number and saved in the DBMS and may be retrieved and viewed at a later date. Based on the quote, a user with appropriate Web-verifiable authority may place an order on behalf of a company in accordance with a pre-existing agreement with the company. An employee of the seller, using the same DBMS, purchases product to fill the order. When the product is received, information regarding receipt of the product is entered into the DBMS. Orders are assembled, shipped and billed, all using the same DBMS. Customers can retrieve previous quote records and view order and shipment status via the Web. Customer invoices are automatically generated upon shipment. When a customer payment is received, details concerning the payment are entered into the DBMS. Vendor invoices and payments are also handled using the DBMS, and both customers and vendors can view payment status—invoice, credit (from returns), etc.—via the Web, allowing paper invoice copies to be dispensed with if desired. Returns are provided for and may be return of an entire piece of equipment or replacement of a

warranted component part, and replacements may be electronically tracked. Vendor access is provided via the Web to all information required by the vendor to ensure the best vendor performance, including purchasing information, receiving information, expedite information and returns information. A truly integrated supply chain results, easily capable of global operation. All of the foregoing activities are tracked to enable an electronic employee (or vendor or customer) evaluation report to be generated. The resulting report is made accessible via the Web to the person (or entity) to which the report pertains and to supervisory personnel.

032151-002

Star transmission (Email, verbal, phone, fax, memo, print out)

External influence

Sales

Customer Service

Accounting

Purchasing

Receiving

Engineering

Assembly

Ship

Key:

1. Manual duplicate input

2. Non-personal

Manual and automatic

The diagram illustrates a 'Client server single relational database' system. At the center is a circle labeled 'Client server single relational database'. Surrounding this central hub are eight smaller circles, each representing a functional area with a list of steps: 'Sales 1', 'Sales Support 1+2', 'Accounting 1+2+3', 'Inventory 1+2+3+4', 'Purchasing 1+2+3+4', 'Order Assembly 1+2+3+4+5', 'Ship 1+2+3+4+5+6', and 'Customer FDMA 1+2+3+4+5+6+7'. Arrows indicate the flow of data and processes between these functional areas and the central database. The entire system is enclosed in a large circle with arrows pointing inward from the outside, labeled 'External influence'. To the left of the main diagram is a box titled 'Factual Analysis' containing 'Employee/Vendor performance' and 'Customer satisfaction'. Below this is another box titled 'External influence and view (Vendor, customer, employee, new customer account)' containing three numbered points: 1. Electronic means (Web business to business commerce, satellite, EDI to mainframe, intranet internal corporate business process), remote terminal direct dial; 2. Telecommunication means E-mail, phone, fax; 3. Physical means letter, physical visit. To the right of the main diagram is a box with a list of five numbered points: 1. Secured and authority check; 2. Best practice, possible outcome, expected input parameters affecting downstream; 3. Process is reversible until posted; 4. Track discrepancy and allow improvement from feedback; 5. Trigger an event to allow other event happens. At the bottom right is a 'Key' box with two entries: a solid arrow for 'Electronic, non-manual original process' and a dashed arrow for 'Electronic, non manual reversible process'.

Factual Analysis

Employee/Vendor performance

Customer satisfaction

External influence and view
(Vendor, customer, employee, new customer account)

1. Electronic means (Web business to business commerce, satellite, EDI to mainframe, intranet internal corporate business process), remote terminal direct dial
2. Telecommunication means E-mail, phone, fax.
3. Physical means letter, physical visit.

Client server single relational database

Sales 1

Sales Support 1+2

Accounting 1+2+3

Inventory 1+2+3+4

Purchasing 1+2+3+4

Order Assembly 1+2+3+4+5

Ship 1+2+3+4+5+6

Customer FDMA 1+2+3+4+5+6+7

External influence

1. Secured and authority check
2. Best practice, possible outcome, expected input parameters affecting downstream.
3. Process is reversible until posted
4. Track discrepancy and allow improvement from feedback.
5. Trigger an event to allow other event happens

Key:

- Electronic, non-manual original process
- - - - - Electronic, non manual reversible process

FIG 2

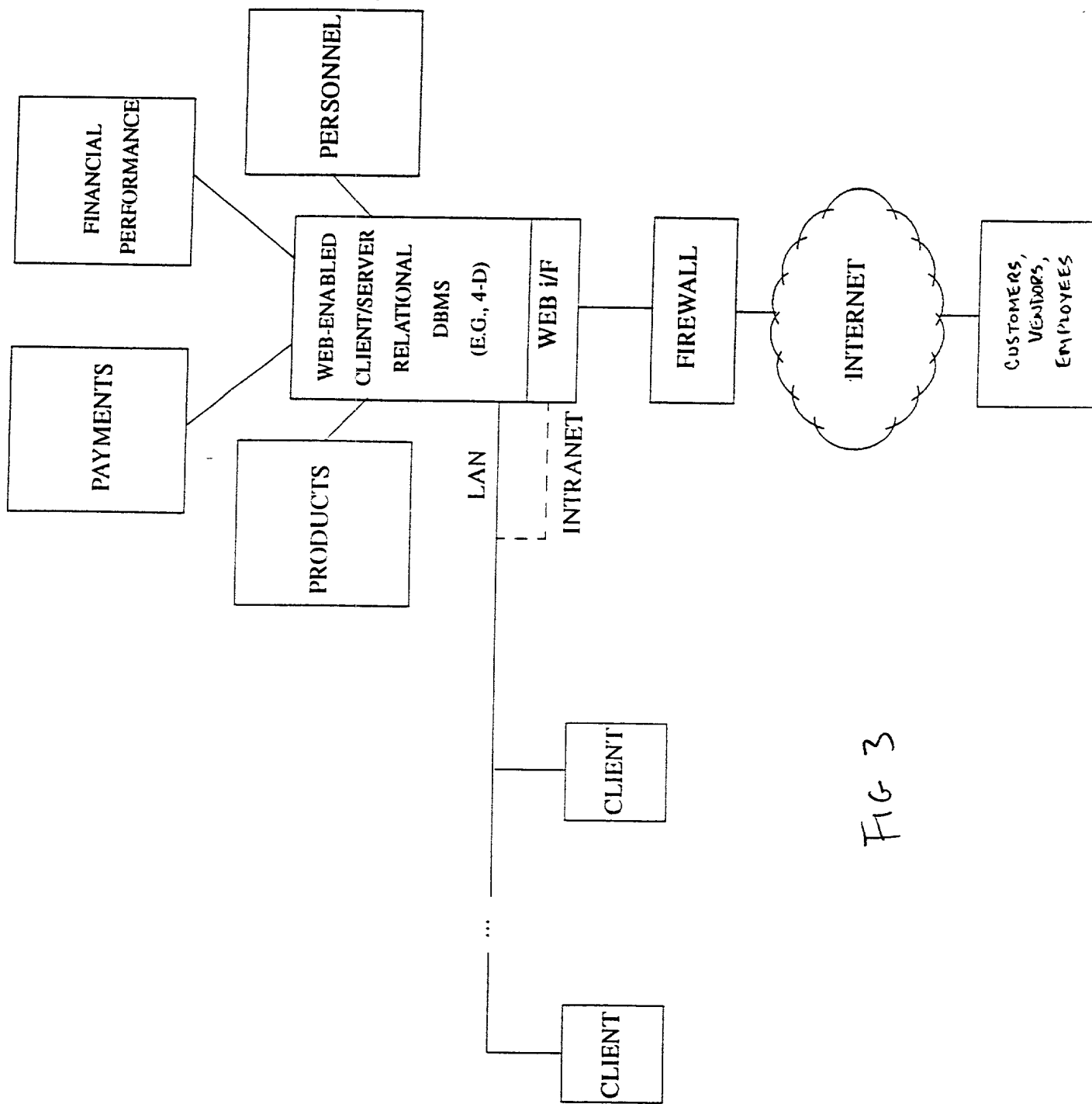


FIG 3

Fig 4

Go Back

Forward

Home

Reload

Images

Open

Print

Find

Stop

Location

What's New?

Handbook

Net Search

Net Directory

Software

Find Products - fill in as you wish and click the search button near the bottom of this page

Manufacturer Part #:

Find Quotes

Manufacturer:

Find this Quote

Description:

Find today's quotes

How many items per page:

Find this weeks quotes

A B C D E F G H I J K L M N O P Q R

S T U V W X Y Z Other

Search for Products

Reset

If you wish to view manufacturers list, click on the first letter of the manufacturer.

Products

Returns

Tracking

Log Off

Home

Find Products - fill in as you wish and click the search button near the bottom of this page

Manufacturer Part #:

Find Quotes

Manufacturer:

Find this Quote

Description:

Find today's quotes

How many items per page:

Find this weeks quotes

A B C D E F G H I J K L M N O P Q R

S T U V W X Y Z Other

Search for Products

Reset

If you wish to view manufacturers list, click on the first letter of the manufacturer.

Products

Returns

Tracking

Log Off

Home

If you would like to save current selection, please make up a name and enter it below then click Save this Set

Fig 7A

Fig 7B

FIG 7C

Location: <http://www.meganeetwork.com/4d.asp?ShopOut>

What's New? | [Home](#) | [Back](#) | [Forward](#) | [Reload](#) | [Images](#) | [Open](#) | [Print](#) | [Find](#) | [Stop](#)

NetScope: Mega Network Inc. | [Net Search](#) | [Net Directory](#) | [Software](#)

Expected date: ☐ ☐ default value is 5 Days
(normal delivery is 3 to 5 working days. If you need immediate delivery, instruct us below)

Partial/No Partial: (please indicate item# that you want to be shipped together, items not shown will be shipped partial)

Item#

Installation: (please indicate item# that need to be installed and describe in detail how you want to have these items installed on the notes section, items not indicated will be shipped without installation)

Item#

Detailed installation instructions:

Please specify how you wish to be repilled.

Your E-Mail: Your Fax# Your Phone#

One of the following 4 fields is required for your sales rep. to start order process.

PO Number: Request for Quotation (RFQ)

Product Identification (PID) Purchase Requisition (PRN)

Clear all input

Please choose an action:

Make Changes to this Quote
Go back to Products List
Submit Replacement PO for an RMA
Submit this PO to Sales Rep
Close and make no changes
Save this quote, but do not submit

Take Action

Please use the following links if you wish to leave the current screen and move on.

[Products](#) [Returns](#) [Tracking](#) [Log Off](#)

[Home](#)

6/20/97		B97-24779		2:00 AM		Quote	
Campaign UNION BANK OF CALIFORNIA LOS ANGELES		Contact person & Phone No DENNIS BAKER (415) 296-6576		Notes (415) 296-6568		Fax (415) 296-6568	
FOB UNION BANK OF CALIFORNIA LOS ANGELES		Ship Via Ground		Ship To (click address to modify) UNION BANK OF CALIFORNIA ACCOUNTS PAYABLE, P.O. BOX 60691 LOS ANGELES, CA 90060-0691		Ship To (click address to modify) UNION BANK OF CALIFORNIA ACCOUNTS PAYABLE, P.O. BOX 60691 LOS ANGELES, CA 90060-0691	
Terms Net 30		Margin 4.50		PRM P.D.		RTG 4.50	
ISO 4.50		263677		50 Prod		50 Prod	
Item Description 1 SATellite PRO 43000T PENT-120 1.3GB HD		Manufacturer - Mfr Part # 602804		Qty - W/ST-Exp 1		Price - Cost 2,170.00	
2 16MB MEMORY MODULE FOR TOSHIBA PORT166		Manufacturer - Mfr Part # 48899		Qty - W/ST-Exp 1		Price - Cost 147.00	
3 16MB MEMORY MODULE FOR TOSHIBA PORT166		Manufacturer - Mfr Part # 48899		Qty - W/ST-Exp 1		Price - Cost 147.00	
4 UNIVERSAL NOTEBOOK CASE		Manufacturer - Mfr Part # CC1336		Qty - W/ST-Exp 1		Price - Cost 56.00	
Comments Comment-L (add linked lines) Comment-R (change ship) Dation-0 (free price cents) Command-m (change fields)		Sub-Total 4,007.61		Tax @ 7.75% 310.59		Total (w/ship & handling) 4,318.20	
Sales Rep CURTIS L		Sup NEMESID C		Sup Commission 1.76		Print Quote Post To Purch Duplicate Quote	
Web User Special Requests NEW ADDRESS CENT RECEIVING, N CA SERVICE CENTER 450 HEIDENBERGER RD OAKLAND CA 94604		Company UNION BANK OF CALIFORNIA LOS ANGELES		Contact person & Phone No DENNIS BAKER (415) 296-6576		Notes that fit in printouts of quotes. Customer notes only print out on quotes.	
Comments that fit in box will fit on printouts of PWS. PWS comments only print out on PWS.		Comments that fit in box will fit on printouts of PWS. PWS comments only print out on PWS.		Comments that fit in box will fit on printouts of PWS. PWS comments only print out on PWS.		Comments that fit in box will fit on printouts of PWS. PWS comments only print out on PWS.	

F168

Sales Records: Modify Records

5/29/97 SHIPPED Customer		M97-24913 SHIPPED Customer		10:22 AM	
Company		Contact person & Phone No		Notes	
UNION BANK OF CALIFORNIA LOS ANGELES		DENNIS BAKER (415) 296-6576		(415) 296-6568	
Customer PO file		Ship To		Fax	
631C00B925		UNION BANK OF CALIFORNIA LOS ANGELES			
FOB Terms		ACCOUNTS PAYABLE, MC 902-070		PORTLAND BRANCH	
480		P.O. BOX 60631		407 SW BROADWAY	
30274		Los Angeles, CA 90060-0691		Portland, OR 97205	
Ship Via Ground		All ACCOUNTS PAYABLE		Alt: PO#631000925	
Item Description (redial)		Unit Price		Status	
1 32MB MEMORY MODULE FOR HP VECTRA SERIES		16096		172.00	
KINGSTON TECHNOLOGY		KTH-HPVEC/32		178.00	
De/Ord 1 5/29/97		Ord/Alt		Ship 1 5/30/97	
Rev'd		Rev'd		Ship	
Ord/Alt		Rev'd		Ship	
Ord/Alt		Rev'd		Ship	
Read Comments		Sys		Sub Total	
IN Invoice #		LINE count = 1		187.00	
AP Voucher #		Share 7.72%		Tax @	
Completed		Commission		Out of state	
Sales Rep		Sup Commission		Installation	
CURTIS L		13		Total (+ ship & handling)	
Edit RPA		Clipboard		87.00	
Print MVS		Show Quote		CstExp	
Cancel MVS		Availability		CstExp	

Web User Special Requests

5/23/97 Notes:

Bill To
Ship To
Location - Room
New address:
PORTLAND BRANCH
407 SW BROADWAY
PORTLAND WA 97205

Ship via
Terms

007-24529 M97-24913	
5/23/97	5/29/97
Contact person & Phone No	
DENNIS BAKER (415) 296-6576	
Customer notes (do not appear on MVS)	Notes that fit in box will fit on printouts of quotes. Customer notes only print out on quotes
MVS comments (do not appear on Quotes)	Reviewed by Nemesis cov
ZFA: AS 500X AS POSSIBLE	
Comments that fit in box will fit on printouts of MVS	
MVS comments only print out on MVS	
Shipping notes	
Backup notes	

Products and Quotes

Please select the following product search options to create quotes:

- Options:
- | | |
|----|------------------------------------------------------------------|
| 1. | Product listing from all Mfr. by product category |
| 2. | Product listing from single Mfr. by product category |
| 3. | Product listing by Mfr. name or description, or Part# |
| 4. | Product listing from single Mfr. by description, or Part# |
| 5. | Approved or standard approved products (Company catalogue) - APL |
| 6. | Previous purchase history (Core Products) |
| 7. | Previous quotes history |

Please use the following links if you wish to leave the current screen and move on.

[Products](#)

[Returns](#)

[Tracking](#)

[Log Off](#)

[Home](#)

FIG 10

0036627-071699

<input type="radio"/> Accessories and Supplies	<input type="radio"/> Communications Hardware	<input type="radio"/> Computers	<input type="radio"/> Education	<input type="radio"/> Enhancement Products
<input type="radio"/> Input Devices	<input type="radio"/> Monitors and Displays	<input type="radio"/> Power Equipment	<input type="radio"/> Printed Information	<input type="radio"/> Printers and Plotters
<input type="radio"/> Services and Agreements	<input type="radio"/> Software, Applications	<input type="radio"/> Software, Communications	<input type="radio"/> Software, Systems	<input type="radio"/> Storage Devices

Please use the following links if you wish to leave the current screen and move on.

Products	Returns	Tracking	Log Off
----------	---------	----------	---------

Home

FIG 11

Products - Single manufacturer input

Manufacturer:

Continue

If you wish to select from manufacturers list, click on the first letter of the manufacturer.

A

B

C

D

E

F

G

H

I

J

K

I

M

N

0

P

Q

R

S

T

U

V

W

X

Y

Z

Other

Please use the following links if you wish to leave the current screen and move on.

Products

Returns

Tracking

Log Off

Home

FIG 12

Products - Search by manufacturer, description and/or part number

Please input one or more of the following information.	
Manufacturer Part #:	<input type="text"/>
Manufacturer:	<input type="text"/>
Item Description:	<input type="text"/>

If you wish to view manufacturers list, click on the first letter of the manufacturer.

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
<input type="button" value="Other"/>												

Please use the following links if you wish to leave the current screen and move on.

FIG 13

00365827-071609 669720-22299E60

Products - Search by manufacturer, description and/or part number

Please input one or more of the following information.	
Manufacturer Part #:	<input type="text"/>
Manufacturer:	<input type="text"/>
Item Description:	<input type="text"/>
Product ID (PID):	<input type="text"/>

If you wish to view manufacturers list, click on the first letter of the manufacturer.

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
<input type="button" value="Other"/>												

Please use the following links if you wish to leave the current screen and move on.

FIG 14

Products - Search by manufacturer, description and/or part number

Please input one or more of the following information.	
Manufacturer Part #:	<input type="text"/>
Manufacturer:	<input type="text"/>
Item Description:	<input type="text"/>
Core products purchased within dates:	
From:	day <input type="text"/> month <input type="text"/> year <input type="text"/>
To:	day <input type="text"/> month <input type="text"/> year <input type="text"/>
<input type="button" value="Search"/> <input type="button" value="Reset"/>	

If you wish to view manufacturers list, click on the first letter of the manufacturer.

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
<input type="button" value="Other"/>												

Please use the following links if you wish to leave the current screen and move on.

Products	Returns	Tracking	Log Off
--------------------------	-------------------------	--------------------------	-------------------------

[Home](#)

FIG 15

Products - Quotes Look Up

Quote#:

Please use the following links if you wish to leave the current screen and move on.

[Home](#)

FIG 16

669420-CE3600

Find Quotes

Select One	Quote Number	Quote Date	Customer PO Number
<input type="radio"/>	Q97-24633	12/11/97	
<input type="radio"/>	Q97-24634	12/11/97	
<input type="radio"/>	Q97-24635	12/11/97	
<input type="radio"/>	Q97-24636	12/13/97	123
<input type="radio"/>	Q97-24637	12/13/97	123
<input type="radio"/>	Q97-24638	12/16/97	123
<input type="radio"/>	Q97-24639	12/15/97	
<input type="radio"/>	Q97-24640	12/16/97	
<input type="radio"/>	Q97-24641	12/16/97	123
<input type="radio"/>	Q97-24642	12/16/97	123
<input type="radio"/>	Q97-24643	12/16/97	123
<input type="radio"/>	Q97-24644	12/17/97	
<input type="radio"/>	Q97-24645	12/17/97	123
<input type="radio"/>	Q97-24646	12/17/97	123
<input type="radio"/>	Q97-24647	12/17/97	
<input type="radio"/>	Q97-24648	12/17/97	
<input type="radio"/>	Q97-24649	12/17/97	
<input type="radio"/>	Q97-24650	12/17/97	
<input type="radio"/>	Q97-24651	12/17/97	
<input type="radio"/>	Q97-24652	12/17/97	
<input type="radio"/>	Q97-24653	12/17/97	
<input type="radio"/>	Q97-24654	12/17/97	
<input type="radio"/>	Q97-24655	12/17/97	
<input type="radio"/>	Q97-24656	12/17/97	
<input type="radio"/>	Q97-24657	12/17/97	
<input type="radio"/>	Q97-24658	12/17/97	
<input type="radio"/>	Q97-24659	12/17/97	123

Show selected quote
Reset

Please use the following links if you wish to leave the current screen and move on.

[Products](#)
[Returns/Repair](#)
[Tracking](#)
[Log Off](#)

[Home](#)

FIG 17

Mega Network Quote

785 Palomar Avenue, Sunnyvale, CA 94086

Phone: (408) 730-9138 Fax: (408) 720-1293

Quote Number: Q97-24625

Quote Date: 11/25/97

Quote For: ORACLE

Sales Person	Ship Via	Terms	FOB
Keith Sasaki	UPS Ground	N30	Orig

Item#	Description	Mfct.-Part No.	Unit Price	Qty	Extended Price
1	BLASTER CD 8X IDE CD-ROM DRIVE NO SOUND CARD	5018601003 (MK4)	154.00	10	1,540.00
2	SOUND BLASTER 16 VALUE PNP	2029591131	97.00	10	970.00
3	LASERJET 5L FS 4MB MEMORY UPGRADE	C3148A	241.00	5	1,205.00
4	OPTIQUEST Q71 17IN 28MM 1280X1024 MPRII	Q71	577.00	10	5,770.00
5	LCS-1022 SHIELDED COMP SPEAKER 10 WATTS HDPHNE.BASS,TRE ADAPTER	LCS-1022	54.00	10	540.00
6	VECTRA VL5 PENT-166 MMX 1.6GB- HD 16MB ISA/PCI SVGA W/WFW OR W95	D4592A#ABA	1,759.00	10	17,590.00
7	LASERJET 5L-FS 4PPM 600DPI	C3941B#ABA	520.00	5	2,600.00
8	32MB MEM. EXP. KIT F/HP VE2,VL4,VA, XM4,XA. (2X16MB) 60NS	D3648B	332.00	20	6,640.00
9	LASERJET 5L SUPPORT PACK	H5500A	142.00	5	710.00
10	5.25 DRIVE RAILS 5 PAIRS (FOR 3RD PARTY DEVICES)	D2880A	26.00	10	260.00
11	SPORTSTER,28.8/33.6,INT..MODEM DATA FAX, ISA.	000840-0	149.00	10	1,490.00
12	FAST ETHERLINK XL PCI 10/100	3C905-TX	98.00	10	980.00

New notes:

Sub-Total: 40,295.00

Show Tax

Installations

Please select an action and click Take Action button.

Add/Change/Remove products in this quote

Show last Search results of Products List

Save this quote for future reference

I am ready to order

Duplicate this quote into a new quote

Take Action

Reset

Please use the following links if you wish to leave the current screen and move on.

Products

Returns/Repair

Tracking

Log Off

[Home](#)[Previous Notes](#)[Back to Top of Page](#)

FIG 18

Mega Network Quot

785 Palomar Avenue, Sunnyvale, CA 94086

Phone: (408) 730-9138 Fax: (408) 720-1293

Quote Number: Q97-24625

Quote Date: 11/25/97

Installations - Selection.

Select one system that you wish to give instructions for installation configuration.

Or click on the appropriate button for the action you wish to take.

Part#	Manufacturer	Description	Price	Total Qty Ordered	Qty Installed	Qty available for installation	Select
3C905-TX	3-COM	FAST ETHERLINK XL PCI 10/100	98.00	10	0	10	<input type="radio"/>
000840-0	U.S. ROBOTICS	SPORTSTER.28.8/33.6,INT.,MODEM DATA FAX. ISA.	149.00	10	0	10	<input type="radio"/>
D2880A	HEWLETT PACKARD (SYSTEMS)	5.25 DRIVE RAILS 5 PAIRS (FOR 3RD PARTY DEVICES)	26.00	10	0	10	<input type="radio"/>
H5500A	HP PRINTERS	LASERJET 5L SUPPORT PACK	142.00	5	0	5	<input type="radio"/>
D3648B	HEWLETT PACKARD	32MB MEM. EXP. KIT F/HP VE2,VL4,VA, XM4.XA. (2X16MB) 60NS	332.00	20	0	20	<input type="radio"/>
C3941B#ABA	HP PRINTERS	LASERJET 5L-FS 4PPM 600DPI	520.00	5	0	5	<input type="radio"/>
D4592A#ABA	HEWLETT PACKARD (SYSTEMS)	VECTRA VL5 PENT-166 MMX 1.6GB- HD 16MB ISA/PCI SVGA W/WFW OR W95	1.759.00	10	0	10	<input type="radio"/>
LCS-1022	LABTEC	LCS-1022 SHIELDED COMP SPEAKER 10 WATTS HDPHNE.BASS.TRE ADAPTER	54.00	10	0	10	<input type="radio"/>
Q71	VIEWSONIC	OPTIQUEST Q71 17IN 28MM 1280X1024 MPRII	577.00	10	0	10	<input type="radio"/>
C3148A	HP PRINTERS	LASERJET 5L FS 4MB MEMORY UPGRADE	241.00	5	0	5	<input type="radio"/>
2029591131	CREATIVE	SOUND BLASTER 16 VALUE PNP	97.00	10	0	10	<input type="radio"/>
5018601003 (MK4	CREATIVE LABS	BLASTER CD 8X IDE CD-ROM DRIVE NO SOUND CARD	154.00	10	0	10	<input type="radio"/>

[Continue](#)[Reset](#)[Finish Installation](#)[Cancel all/Go back to Quote](#)

Please use the following links if you wish to leave the current screen and move on.

[Products](#)[Returns/Repair](#)[Tracking](#)[Log Off](#)[Home](#)

FIG 19

Mega Network Quote

785 Palomar Avenue, Sunnyvale, CA 94086
Phone: (408) 730-9138 Fax:(408) 720-1293

Quote Number: Q97-24625

Quote Date: 11/25/97

HEWLETT PACKARD (SYSTEMS) - VECTRA VL5 PENT-166 MMX 1.6GB- HD 16MB ISA/PCI SVGA W/WFW
OR W95

How many of this item do you want to be installed?

10 ▼

Continue

Reset

Review Installation

Please use the following links if you wish to leave the current screen and move on.

Products

Returns/Repair

Tracking

Log Off

[Home](#)

FIG 20

669120: 669360

Mega Network Quote

785 Palomar Avenue, Sunnyvale, CA 94086
Phone: (408) 730-9138 Fax: (408) 720-1293

Quote Number: Q97-24625

Quote Date: 11/25/97

System receiving installation:

10 @ HEWLETT PACKARD (SYSTEMS) / VECTRA VL5 PENT-166 MMX 1.6GB- HD 16MB ISA/PCI SVGA
W/WFW OR W95

Please select components that you wish to be installed in this system.
You may use your browser's Back button if you wish to go back to previous screen.

Manufacturer	Description	Part#	Total Qty Ordered	Qty taken by other system	Qty to install in this system
3-COM	FAST ETHERLINK XL PCI 10/100	3C905-TX	10	0	0
U.S. ROBOTICS	SPORTSTER.28.8/33.6.INT.,MODEM DATA FAX. ISA.	000840-0	10	0	0
HEWLETT PACKARD (SYSTEMS)	5.25 DRIVE RAILS 5 PAIRS (FOR 3RD PARTY DEVICES)	D2880A	10	0	0
HEWLETT PACKARD	32MB MEM. EXP. KIT F/HP VE2.VL4.VA. XM4.XA. (2X16MB) 60NS	D3648B	20	0	0
LABTEC	LCS-1022 SHIELDED COMP SPEAKER 10 WATTS HDPHNE,BASS,TRE ADAPTER	LCS-1022	10	0	0
VIEWSONIC	OPTIQUEST Q71 17IN 28MM 1280X1024 MPRII	Q71	10	0	0
CREATIVE	SOUND BLASTER 16 VALUE PNP	2029591131	10	0	0
CREATIVE LABS	BLASTER CD 8X IDE CD-ROM DRIVE NO SOUND CARD	5018601003 (MK4	10	0	0

[Continue](#)

[Reset](#)

[Review Installation](#)

Please use the following links if you wish to leave the current screen and move on.

[Products](#)

[Returns/Repair](#)

[Tracking](#)

[Log Off](#)

[Home](#)

FIG 21

Return Merchandise Request

The following products are ready to be submitted for approval & process.

Customer PO#	Customer Invoice#	Manufacturer // Reason for return	Desc // Condition
232105	12890	VIEWSONI	PERFECTSC W/BLT-IN 14
Please inform us to your best knowledge.		- Click here for RMA type Menu - ▼	<input type="radio"/> Opened
232105	12890	VIEWSONI	PERFECTSC W/BLT-IN 14
Please inform us to your best knowledge.		- Click here for RMA type Menu - ▼	<input type="radio"/> Opened

Please feel free to tell us more details below and your eMAIL address, FAX number and/or Phone number.

Mail
FAX
PHONE

Submit for Processing

Reset

Order parts for out of Warranty products

Change ship to address for this RMA

Please use the following links if you wish to leave the current screen and move on.

Products

Returns

Tracking

Log Off

[Home](#)

FIG 22

Returns - Change ship to address for this RMA

Please indicate correct new address to ship:

Address:

City:

State:

Zip Code:

Submit

Reset

Please use the following links if you wish to leave the current screen and move on.

Products

Returns

Tracking

Log Off

[Home](#)

FIG 23

Returns - Out of warranty repair - need to order parts

Manufacturer	<input type="text"/>	<input type="radio"/> <input type="radio"/>	Customer PO#	<input type="text"/>
Manufacturer Part#	<input type="text"/>	<input type="radio"/> <input type="radio"/>	Customer Invoice#	<input type="text"/>
Serial #	<input type="text"/>	<input type="radio"/> <input type="radio"/>	Original Ship Date	<input type="text"/>
Quantity	<input type="text"/>	<input type="radio"/> <input type="radio"/>		

Please tell us the symptom & indicate the part that need with part # if possible.

Symptoms:

Problem Type:

Parts needed:

Part #:

Special Instruction:

Submit

Reset

Please use the following links if you wish to leave the current screen and move on.

Products

Returns

Tracking

Log Off

Home

Tracking

Option 1. Please select type of tracking information that you need:

- 1 ☐ Sales Order Status
- 2 ☐ Return Product & Service Part Status
- 3 ☐ Product Purchase History
- 4 ☐ Return & Service History
- 5 ☐ Accounting Information

Take Action

Reset

Option 2. Please use the following area to request any special report which is not included above. And specify your e-Mail or Fax.

E-Mail

FAX #

PHONE #

Take Action

Reset

Please use the following links if you wish to leave the current screen and move on.

Products

Returns/Repair

Tracking

Log Off

[Home](#)

FIG 25

Tracking - Sales Order Status

Option 1. Please input one of the following fields:

Customer PO# Customer Invoice#

Sort By: Manufacturer ☐ Date ☐ PO# ☐

Take Action

Reset

Option 2. If you do not have the above information, please input one or more of the following information.

Manufacturer Manufacturer Part# Serial#

Month Purchased: Year Purchased:

Sort By: Manufacturer ☐ Date ☐ PO# ☐

Take Action

Reset

Please use the following links if you wish to leave the current screen and move on.

Products

Returns/Repair

Tracking

Log Off

Home

FIG 26

Tracking - Sales Order Status

Preparing data for display.

Check	Date Shipped	PO#	Invoice#	Manufacturer	Part#	Description	Serial#	Asset#
<input checked="" type="checkbox"/>	Mar 14, 1997	PO#232222	13154	VST POWER SYSTEMS	BAT1403	CHARGER 1400 SERIES POWERBOOK W/AC ADAPTER	unknown	unknown
<input checked="" type="checkbox"/>	Mar 3, 1997	236108	13082	USROBOTICS PALM COMP	10104U	PILOT CABLE PC HOTSYNC ACCESSORY	unknown	unknown
<input checked="" type="checkbox"/>	Mar 11, 1997	236167	13130	CYBEX	CURC-8	CABLE SET	unknown	unknown
<input checked="" type="checkbox"/>	Mar 11, 1997	235714	13129	KINGSTON TECHNOLOGY	KTH5L/4	4MB MEMORY CARD FOR HP LASERJET 5L, 5L-FS	unknown	unknown
<input checked="" type="checkbox"/>	Mar 5, 1997	236581	13090	BELKIN COMPONENTS	F2A036-10	10FT PARALLEL PRINTER CABLE DB25M TO CENT36M STANDARD	unknown	unknown
<input checked="" type="checkbox"/>	Mar 5, 1997	236584	13091	BELKIN COMPONENTS	F2A036-10	10FT PARALLEL PRINTER CABLE DB25M TO CENT36M STANDARD	unknown	unknown
<input checked="" type="checkbox"/>	Mar 11, 1997	237159	13132	SIGMA	45150	45150 REALMAGIC ULTRA TV/NTSC MPEG	unknown	unknown
<input checked="" type="checkbox"/>	Mar 11, 1997	236796	13127	PENSTOCK	CD1035E	CD1035E VEIWMAGIC 10" COLOR .26 DPI MONITOR	unknown	unknown
<input type="checkbox"/>	Mar 11, 1997	236796	13127	PENSTOCK	CD1035E	CD1035E VEIWMAGIC 10" COLOR .26 DPI MONITOR	unknown	unknown
<input type="checkbox"/>	Mar 11, 1997	236796	13127	PENSTOCK	CD1035E	CD1035E VEIWMAGIC 10" COLOR .26 DPI MONITOR	unknown	unknown
<input type="checkbox"/>	Mar 11, 1997	236796	13127	PENSTOCK	CD1035E	CD1035E VEIWMAGIC 10" COLOR .26 DPI MONITOR	unknown	unknown
<input type="checkbox"/>	Mar 11, 1997	236796	13127	PENSTOCK	CD1035E	CD1035E VEIWMAGIC 10" COLOR .26 DPI MONITOR	unknown	unknown

Get Freight Carrier & Tracking #
 Ship to Address
 Do a New Search

Take Action

Reset

Please use the following links if you wish to leave the current screen and move on.

Products

Returns/Repair

Tracking

Log Off

Home

FIG 27

Tracking - Sales Order Status

Get Freight Carrier & Tracking

The carrier for CHARGER 1400 SERIES POWERBOOK W/AC ADAPTER - PO# PO#232222 is UPS.

1Z3148X30310042490

Track It

Reset

The carrier for PILOT CABLE PC HOTSYNC ACCESSORY- PO# 236108 is UPS.

1Z3148X30310041875

Track It

Reset

The carrier for CABLE SET- PO# 236167 is UPS.

1Z3148X30310042427

Track It

Reset

The carrier for 4MB MEMORY CARD FOR HP LASERJET 5L, 5L-FS - PO# 235714 is UPS.

1Z3148X30310042356

Track It

Reset

The carrier for 10FT PARALLEL PRINTER CABLE DB25M TO CENT36M STANDARD - PO# 236581 is Hand Carried or Freight Truck.

[Click here to request the status of your order by e-Mail.](#)

The carrier for 10FT PARALLEL PRINTER CABLE DB25M TO CENT36M STANDARD - PO# 236584 is Hand Carried or Freight Truck.

[Click here to request the status of your order by e-Mail.](#)

The carrier for 45150 REALMAGIC ULTRA TV/NTSC MPEG- PO# 237159 is UPS.

1Z3148X30310042392

Track It

Reset

The carrier for CD1035E VEIWMAGIC 10" COLOR .26 DPI MONITOR- PO# 236796 is Hand Carried or Freight Truck.

[Click here to request the status of your order by e-Mail.](#)

The carrier for 9 PIN STRAIGHT DB9 FEMALE CABLE- PO# PURCH CARD is UPS.

1Z3148X30310042472

Track It

Reset

The carrier for LASERJET 4MV 16PPM LASERPR 600DPI- Serial# SJPFH013545 is Hand Carried or Freight Truck.

[Click here to request the status of your order by e-Mail.](#)

Please use the following links if you wish to leave the current screen and move on.

[Products](#)

[Returns/Repair](#)

[Tracking](#)

[Log Off](#)

[Home](#)

FIG 28



[Interactive
Functions]



TRACKING



QUICK-COST



DROP-OFF



PICK-UP

Services

Software

News

About UPS

Contents

Tracking

Tracking Result

Current Status: **Delivered**
Delivered on: 3-31-1997 at 9:29 AM
Delivered to: MAIL ROOM
Received by: CRECELINOS

Addressed to: SUNNYVALE, CA US

UPS Service: 2ND DAY AIR
Tracking Number: 1Z3148X30210042769

Notice

UPS authorizes you to use UPS tracking systems solely to track shipments tendered by or for you to UPS for delivery and for no other purpose. Any other use of UPS tracking systems and information is strictly prohibited.

Scanning Information

3-31- 9:29 AM SUNNYVALE, CA US
1997

DELIVERED

3-27- 11:57 HERNDON, VA US
1997 AM

THE CONSIGNEE DIDN'T WANT
THE PACKAGE - PACKAGE BEING
RETURNED

3-26- 12:23 PM HERNDON, VA US
1997

DELIVERED

[Top of Page](#)



[HOME](#) | [Track](#) | [Quick Cost](#) | [Drop-off](#) | [Pick-up](#) | [Contents](#)

FIG 29

FIG 30

[illegible]

[illegible]

Case# Quote# RMA#
 PO# Invoice#

More Search Options

Products	Returns/Repair	Tracking	Log Off
----------	----------------	----------	---------

FIG 31

Tracking - Return product & Service Part Status

Please input one or more of the following informaion.

Manufacturer	<input type="text"/>
Manufacturer Part#	<input type="text"/>
Serial#	<input type="text"/>
Month Returned	<input type="text" value="click here to select month"/>
Year Returned	<input type="text" value="click here to select year"/>

Input of year is required for monthly search.

Sort By: Manufacturer - ☐ or PO# - ☐ or Invoice# - ☐

<input type="button" value="Take Action"/>	<input type="button" value="Reset"/>
--------------------------------------------	--------------------------------------

Please use the following links if you wish to leave the current screen and move on.

<input type="button" value="Products"/>	<input type="button" value="Returns/Repair"/>	<input type="button" value="Tracking"/>	<input type="button" value="Log Off"/>
-----------------------------------------	-----------------------------------------------	-----------------------------------------	----------------------------------------

[Home](#)

FIG 32

Tracking - Return product & Service Part Status

Searching database for requested records.

2 records found. Preparing data for display.

Check	RMA#	ShipDate	PO#	Invoice#	Manufacturer	Part#	Description	RMA Qty	Qty Recvd	Notes
<input type="checkbox"/>	R-261812RP	Apr 1, 1997	PO#232222	13154	california ic		24MB APPLE PWRBK 1400 SERIES	2	2	
<input type="checkbox"/>	R-262337RP	Apr 9, 1997	230440	12775	JVC INFORMATION PROD	BC-CR2100B-2X4	MINITOWER EXT 5X4X4 CDR TOWER 5 BAY 4X RECORD 4X READ SCSI2	1	1	

Get Freight Carrier & Tracking #

Ship to Address

Do a New Search

Take Action

Reset

Please use the following links if you wish to leave the current screen and move on.

Products

Returns/Repair

Tracking

Log Off

Home

FIG 33

Tracking - Product Purchase History

Please select one option for each criteria.

Criteria 1. Duration of look-back: ☒ 30 days ☐ 60 days ☐ 90 days

Criteria 2. As of: ☐ Today
☒ Month

Criteria 3. Sort by: ☐ Manufacturer ☐ Manufacturer Part#
☐ Month ☒ Purchase Order#

Please use the following links if you wish to leave the current screen and move on.

[Home](#)

FIG 34

Tracking - Product Purchase History

Searching database. If this takes too long, please narrow down your search.
Search has completed. 27 records found.

Date Shipped	PO#	Manufacturer	Part#	Description	Qty
Mar 14, 1997	PO#232222	VST POWER SYSTEMS	BAT1403	CHARGER 1400 SERIES POWERBOOK W/AC ADAPTER	1
Mar 19, 1997	PO#232222	BELKIN COMPONENTS	F2N983-02	POWERBK SCSI2 CABLE HDI-30M:M DB50M 2'	1
Mar 14, 1997	PO#232222	GLOBAL VILLAGE	30-3100	POWERPORT PLATINUM PRO ETH PCCARD & MODEM	1
Mar 14, 1997	PO#232222	california ic		24MB APPLE PWRBK 1400 SERIES	2
Mar 14, 1997	PO#232222	APPLE	M5576LL/A	POWER BOOK 1400C/133 16MG 1GB W/6X CD	1
Mar 3, 1997	236108	USROBOTICS PALM COMPUTING	10104U	PILOT CABLE PC HOTSYNC ACCESSORY	1
Mar 3, 1997	236108	USROBOTICS PALM COMPUTING	10100U	PILOT 1MB UPG FOR DT ORGANIZER	1
Mar 3, 1997	236108	U.S. ROBOTICS PALM COMPUTING	10111U	PILOT MODEM CABLE	1
Mar 3, 1997	236108	USROBOTICS PALM COMPUTING	10101U	PILOT SLIM LEATHER CASE ACCESSORY	1
Mar 3, 1997	236108	USROBOTICS	10108U	10108UPILOT STYLUS 3-PAK	1
Mar 3, 1997	236108	US ROBOTICS	80101U	80101U PILOT 5000 ORGANIZER PKG.	1
Mar 11, 1997	236167	CYBEX	CURC-8	CABLE SET	1
Mar 11, 1997	236167	CYBEX	PMRF-16	MAGNUM COMMANDER 16 PORT	1
Mar 11, 1997	235714	KINGSTON TECHNOLOGY (MEMORY)	KTH5L/4	4MB MEMORY CARD FOR HP LASERJET 5L, 5L-FS	1
Mar 5, 1997	236581	BELKIN COMPONENTS	F2A036-10	10FT PARALLEL PRINTER CABLE DB25M TO CENT36M STANDARD	1
Mar 5, 1997	236581	HP PRINTERS	C3941B#ABA	LASERJET 5L-FS 4PPM LASERPR 1MB 600DPI	1
Mar 5, 1997	236584	BELKIN COMPONENTS	F2A036-10	10FT PARALLEL PRINTER CABLE DB25M TO CENT36M STANDARD	1
Mar 5, 1997	236584	HP PRINTERS	C3941B#ABA	LASERJET 5L-FS 4PPM LASERPR 1MB 600DPI	1
Mar 11, 1997	237159	SIGMA	45150	45150 REALMAGIC ULTRA TV/NTSC MPEG	1
Mar 11, 1997	236796	PENSTOCK	CD1035E	CD1035E VEIWMAGIC 10" COLOR .26 DPI MONITOR	5
Mar 13, 1997	PURCH CARD	WORTHINGTON	F36	9 PIN STRAIGHT DB9 FEMALE CABLE	1
Mar 12, 1997	237488	HP PRINTERS	C3142A#ABA	LASERJET 4MV 16PPM LASERPR 600DPI	1

Totals from Mar 1, 1997 to Mar 31, 1997

Total Number of POs: 12

Total Amount of Purchase: \$26,343.00

Total Number of Items Purchased: 238

Please use the following links if you wish to leave the current screen and move on.

[Products](#)

[Returns/Repair](#)

[Tracking](#)

[Log Off](#)

[Home](#)

FIG 35

Tracking - Product Return History

Please select one option for each criteria.

Criteria 1. Duration of look-back: ☒ 30 days ☐ 60 days ☐ 90 days

Criteria 2. As of:

☐ Today

☒ Month

Criteria 3. Sort by:

☒ Manufacturer

☐ Manufacturer Part#

☐ Month

☐ Purchase Order#

☐ Invoice#

Take Action

Reset

Please use the following links if you wish to leave the current screen and move on.

Products

Returns/Repair

Tracking

Log Off

Home

FIG 36

Tracking - Product Return History

Searching database for requested records.

2 records found. Preparing data for display.

RMA#	PO#	Invoice#	Manufacturer	Part#	Description	RMA Qty
R-261812RP	PO#232222	13154	california ic		24MB APPLE PWRBK 1400 SERIES	2
R-262337RP	230440	12775	JVC INFORMATION PROD	BC-CR2100B-2X4	MINITOWER EXT 5X4X4 CDR TOWER 5 BAY 4X RECORD 4X READ SCSI2	1

Totals from Mar 1, 1997 to Mar 31, 1997

Total Number of Returns: 2

Total Amount of Returns: \$1,654.00

Total Number of Items Returned: 3

Please use the following links if you wish to leave the current screen and move on.

[Products](#)[Returns/Repair](#)[Tracking](#)[Log Off](#)[Home](#)

FIG 37

Tracking - Accounting Information

Please enter your password for accounting information.

Password:

If you wish to change your password, enter new password below.

Change password:

Confirm new password:

Enter

Reset

Please use the following links if you wish to leave the current screen and move on.

Products

Returns/Repair

Tracking

Log Off

Home

FIG 38

6640:CEGB01

Search Options

Option	Customer Purchase	
3.	Order #	

Option 4.	Customer Invoice Period	From:	click here to select month ▼ click here to select year ▼
		To:	click here to select month ▼ click here to select year ▼

[click here to select sort method](#) ▼ [click here to select the scope of search](#) ▼

Take Action Reset

Please use the following links if you wish to leave the current screen and move on.

Products	Returns/Repair	Tracking	Log Off
----------	----------------	----------	---------

Home

Fig 39

[illegible]

Take Action Reset

Products	Returns/Repair	Tracking	Log Off
----------	----------------	----------	---------

FIG 40

Customer Invoice Detail

Customer Name: SEJIN with ORACLE

Invoice Number:

PO Number:

Original Invoice or Replacement Invoice for RMA

Invoice Date	Invoice Number	MWS Number	PO Amount	Ordered Date	Shipped Date	Net Invoice Amount	Tax Amount	Freight Amount	Other Amount	RMA
10/21/97	OR10-A21378	M97-25134	\$11,112.24	10/21/97	10/23/97	\$11,112.24	\$1,000.76	\$100.00		

Note: Please go to tracking for proof of delivery.

Please use the following links if you wish to leave the current screen and move on.

[Products](#)

[Returns/Repair](#)

[Tracking](#)

[Log Off](#)

[Home](#)

FIG 41

Vendor Invoice

Search Options

Option 1.	Vendor Invoice #	<input type="text"/>
Option 2.	Vendor Credit Memo#	<input type="text"/>
Option 3.	Vendor Purchase Order #	<input type="text"/>
Option 4.	Vendor Invoice Period	<div>From: <input type="text" value="click here to select month"/> <input type="text" value="click here to select year"/></div> <div>To: <input type="text" value="click here to select month"/> <input type="text" value="click here to select year"/></div>

Please use the following links if you wish to leave the current screen and move on.

[Home](#)

FIG 42

Vendor Invoice Search Option

Invoice Date	Document Number	PO Number	Type	Status	Amount	Paid Amount	Balance	Check Number	Check Date	Show Detail
10/21/97	OR10-A21378	901450912	Invoice	Unpaid	\$12,129.00	\$10,129.00	\$2,000	#495	11/21/97	<input type="checkbox"/>
10/25/97	OR10-A21398	901450955	Credit Memo	Used	\$12,729.00	\$10,729.00	\$2,000	#534	11/21/97	<input type="checkbox"/>

Take Action

Reset

Please use the following links if you wish to leave the current screen and move on.

Products

Returns/Repair

Tracking

Log Off

Home

FIG 43

[illegible]

Vendor Invoice Detail

Vendor Name:

Invoice Number:

PO Number:

Original Invoice or Replacement Invoice for RMA

Payee	Invoice Number	MWS Number	Invoice Date	Received Date	Invoice Amount	Actual Amount	RMA
Tech Data	M21378	M97-25134	10/21/97	10/23/97	\$12,129.00	\$11,769.00	

Note: Please go to tracking for proof of delivery.

Please use the following links if you wish to leave the current screen and move on.

Products	Returns/Repair	Tracking	Log Off
--------------------------	--------------------------------	--------------------------	-------------------------

[Home](#)

Fig 44

Internal Web Security Access

		Sales		CSR		Acct.		Supervisor		Mgnt.	
		U	A	U	A	U	A	U	A	U	A
1. Add names.		V	V	V	V	V	V	V	V	V	V
2. Delete/change names.		V	O	V	O	V	O	V	O	V	V
3. Authority to post own quotes.		+	+	+	+	+	+	+	V	+	V
4. Authority to post others' quotes.		+	+	+	+	+	+	+	+	+	V
5. Authority to track own sales status.		+	V	+	V	+	V	+	V	+	V
6. Authority to track own RMA status.		+	V	+	V	+	V	+	V	+	V
7. Authority to track own sales history.		+	V	+	V	+	V	+	V	+	V
8. Authority to track own RMA history.		+	V	+	V	+	V	+	V	+	V
9. Authority to track for others' sales status.	N	+	+	+	+	+	+	+	+	V	V
10. Authority to track for others' sales status.	N	+	+	+	+	+	+	+	+	V	V
11. Authority to track for others' RMA status.	N	+	+	+	+	+	+	+	+	V	V
12. Authority to track for others' sales history.	N	+	+	+	+	+	+	+	+	V	V
13. Authority to track for others' RMA history.	N	+	+	+	+	+	+	+	+	V	V
14. Maximum # of ship to per user.	N	+	+	+	+	+	+	+	+	V	V
15. Maximum # of PO/day/user.	N	+	+	+	+	+	+	+	+	V	V
16. Maximum \$ of PO/day/user.	N	+	+	+	+	+	+	+	+	V	V
17. Maximum \$ of PO/day/company.	N	+	+	+	+	+	+	+	+	V	V
18. Overall credit limit.	N	O	O	O	O	O	O	+	+	V	V
19. Default maximum PO \$ amount. (Send alert & stop MWS posting)	N	+	+	+	+	+	+	+	+	V	V
20. Authority to use credit card purchase	N	+	+	+	+	+	+	+	+	V	V

N = Blocked view, only management has view.

+= Add, but cannot activate web activity.

V = Add, and activate web activity.

O = Block out, not applicable.

U = use only
A = approval authority

FIG 45

Authority
Typical Lineage (Authority) Tree

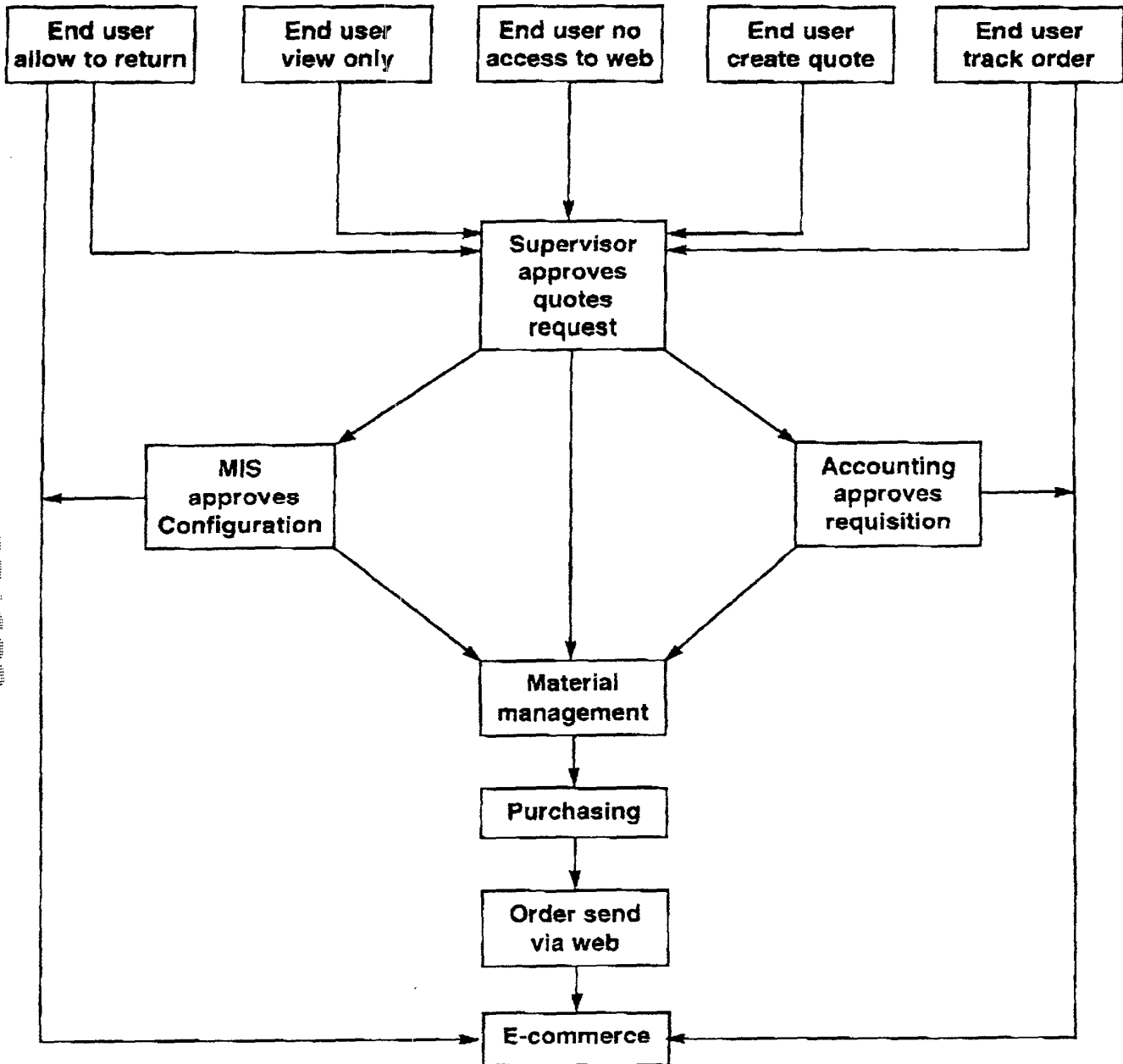


FIG 46

Tip 3

[illegible]

File 49

[illegible]

Company Price List

Edit

Company Name: IVARHEAD CORPORATION

Defaults: ☐ No HTTP URLs

Price Base: Markup

AvgCost: .000

☐ Web User

Update Prices

Clean Up

Export/Print

Ship To Addr

Edit Empl

Print Empl

Spec Web URL

Display List

Sort List

Search

Apply

Part Number

Manufacturer

Price Basis

Markup

Employee's LAST Name...

Cho1

Cancel

OK

c/o

Fig 50

Company Price List

Company Name: TWINHEAD CORPORATION

Company Code: Seq# 833 Sales Rep Code: LOUJECHE

Authorized Personnel Employee Num Purchaser Web Limit

Price Base: Markup Avgcast OK

Web User Edit Empl Print Empl Ship To Addr

Update Prices Clean Up Export/Print Price Basis Mark-up Avail Spec Web URL

Display List Search Apply Manufacturer

Part Number

Is Won Choi authorized to make web purchases?
If not he/she will be able to create but NOT
SUBMIT web quotes.

Cancel No Yes

0/0

Icons: [Printer] [Save] [Find] [Home] [Back] [Forward] [Stop] [Close]

FIG 52

File Edit Enter Select Reports Mega Activities

FIG 53

Company Price List

Company Name: TWING AD CORPORATION

Defaults: ☐ No Mfg URLs ☐ No Mfg URLs

Price Base: ☐ Markup ☐ AvgCost

Display List: ☐ Search ☐ Apply

Sort List: ☐ Manufacturer ☐ Price Basis ☐ Mark-up ☐ Avail ☐ Spec Web URL

Company Code: 833 **Sales Rep Code:** 100 JECQHE

Authorized Personnel: ☐ **Employee Num:** **Purchaser:** **Web Limit:**

User Name: Wun Choi
Empl Num: MN01250
Password: FRS13329

OK

Parameter	Estimate	Standard Error	t-Statistic	p-Value
α_1	0.0000	0.0000	0.0000	1.0000
α_2	0.0000	0.0000	0.0000	1.0000
α_3	0.0000	0.0000	0.0000	1.0000
α_4	0.0000	0.0000	0.0000	1.0000
α_5	0.0000	0.0000	0.0000	1.0000
α_6	0.0000	0.0000	0.0000	1.0000
α_7	0.0000	0.0000	0.0000	1.0000
α_8	0.0000	0.0000	0.0000	1.0000
α_9	0.0000	0.0000	0.0000	1.0000
α_{10}	0.0000	0.0000	0.0000	1.0000
α_{11}	0.0000	0.0000	0.0000	1.0000
α_{12}	0.0000	0.0000	0.0000	1.0000
α_{13}	0.0000	0.0000	0.0000	1.0000
α_{14}	0.0000	0.0000	0.0000	1.0000
α_{15}	0.0000	0.0000	0.0000	1.0000
α_{16}	0.0000	0.0000	0.0000	1.0000
α_{17}	0.0000	0.0000	0.0000	1.0000
α_{18}	0.0000	0.0000	0.0000	1.0000
α_{19}	0.0000	0.0000	0.0000	1.0000
α_{20}	0.0000	0.0000	0.0000	1.0000
α_{21}	0.0000	0.0000	0.0000	1.0000
α_{22}	0.0000	0.0000	0.0000	1.0000
α_{23}	0.0000	0.0000	0.0000	1.0000
α_{24}	0.0000	0.0000	0.0000	1.0000
α_{25}	0.0000	0.0000	0.0000	1.0000
α_{26}	0.0000	0.0000	0.0000	1.0000
α_{27}	0.0000	0.0000	0.0000	1.0000
α_{28}	0.0000	0.0000	0.0000	1.0000
α_{29}	0.0000	0.0000	0.0000	1.0000
α_{30}	0.0000	0.0000	0.0000	1.0000
α_{31}	0.0000	0.0000	0.0000	1.0000
α_{32}	0.0000	0.0000	0.0000	1.0000
α_{33}	0.0000	0.0000	0.0000	1.0000
α_{34}	0.0000	0.0000	0.0000	1.0000
α_{35}	0.0000	0.0000	0.0000	1.0000
α_{36}	0.0000	0.0000	0.0000	1.0000
α_{37}	0.0000	0.0000	0.0000	1.0000
α_{38}	0.0000	0.0000	0.0000	1.0000
α_{39}	0.0000	0.0000	0.0000	1.0000
α_{40}	0.0000	0.0000	0.0000	1.0000
α_{41}	0.0000	0.0000	0.0000	1.0000
α_{42}	0.0000	0.0000	0.0000	1.0000
α_{43}	0.0000	0.0000	0.0000	1.0000
α_{44}	0.0000	0.0000	0.0000	1.0000
α_{45}	0.0000	0.0000	0.0000	1.0000
α_{46}	0.0000	0.0000	0.0000	1.0000
α_{47}	0.0000	0.0000	0.0000	1.0000
α_{48}	0.0000	0.0000	0.0000	1.0000
α_{49}	0.0000	0.0000	0.0000	1.0000
α_{50}	0.0000	0.0000	0.0000	1.0000
α_{51}	0.0000	0.0000	0.0000	1.0000
α_{52}	0.0000	0.0000	0.0000	1.0000
α_{53}	0.0000	0.0000	0.0000	1.0000
α_{54}	0.0000	0.0000	0.0000	1.0000
α_{55}	0.0000	0.0000	0.0000	1.0000
α_{56}	0.0000	0.0000	0.0000	1.0000
α_{57}	0.0000	0.0000	0.0000	1.0000
α_{58}	0.0000	0.0000	0.0000	1.0000
α_{59}	0.0000	0.0000		

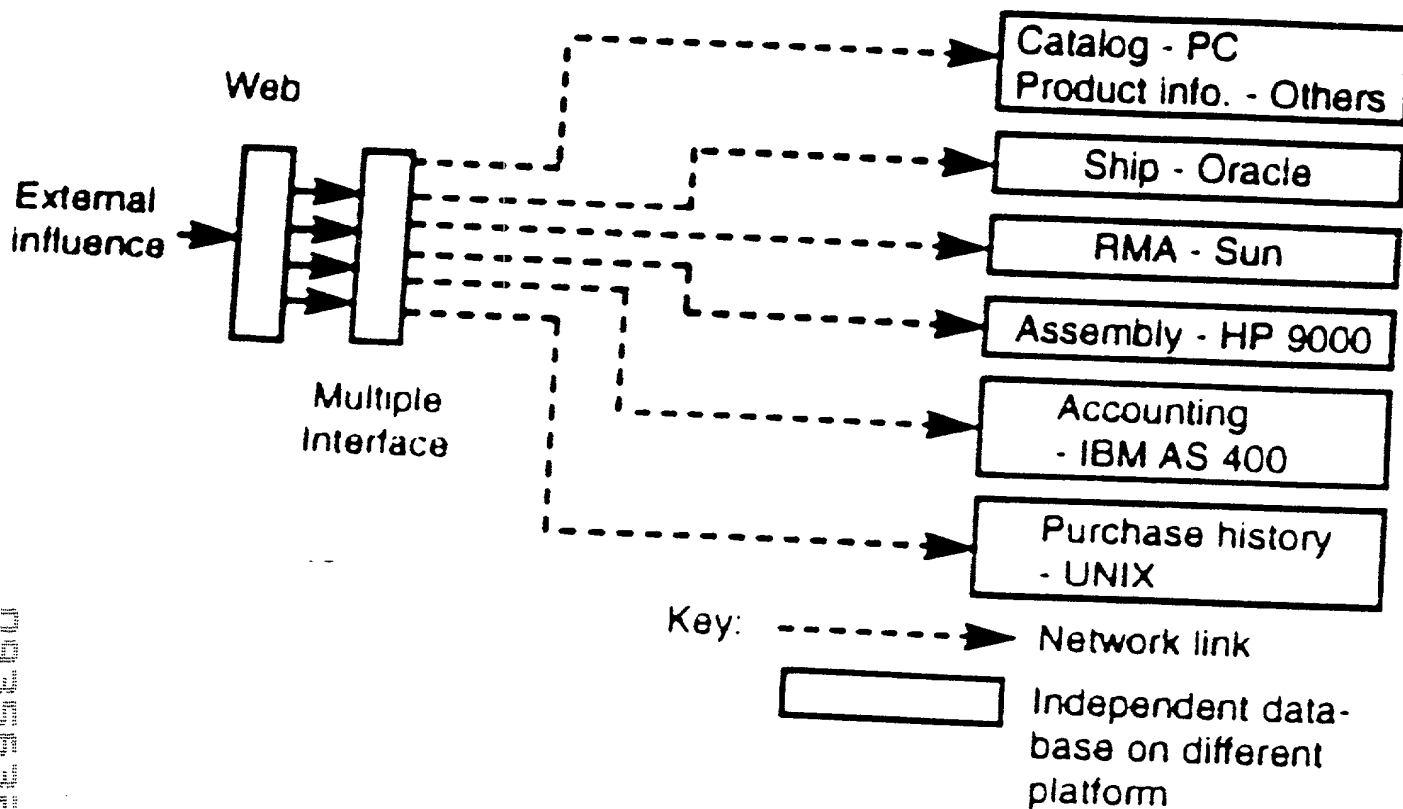


FIG 56

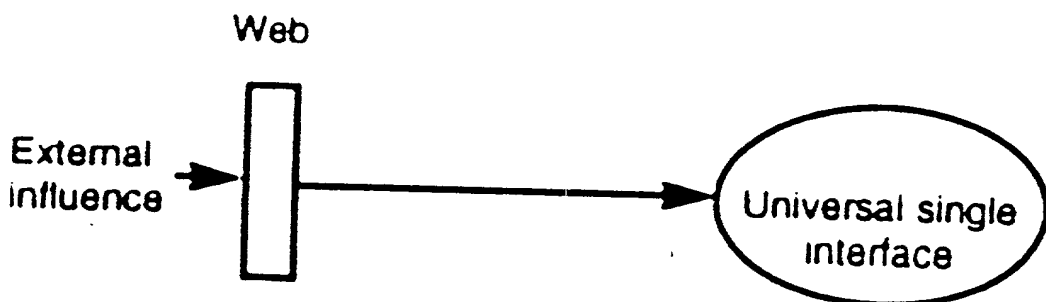


FIG 57

Entity Diagram Index

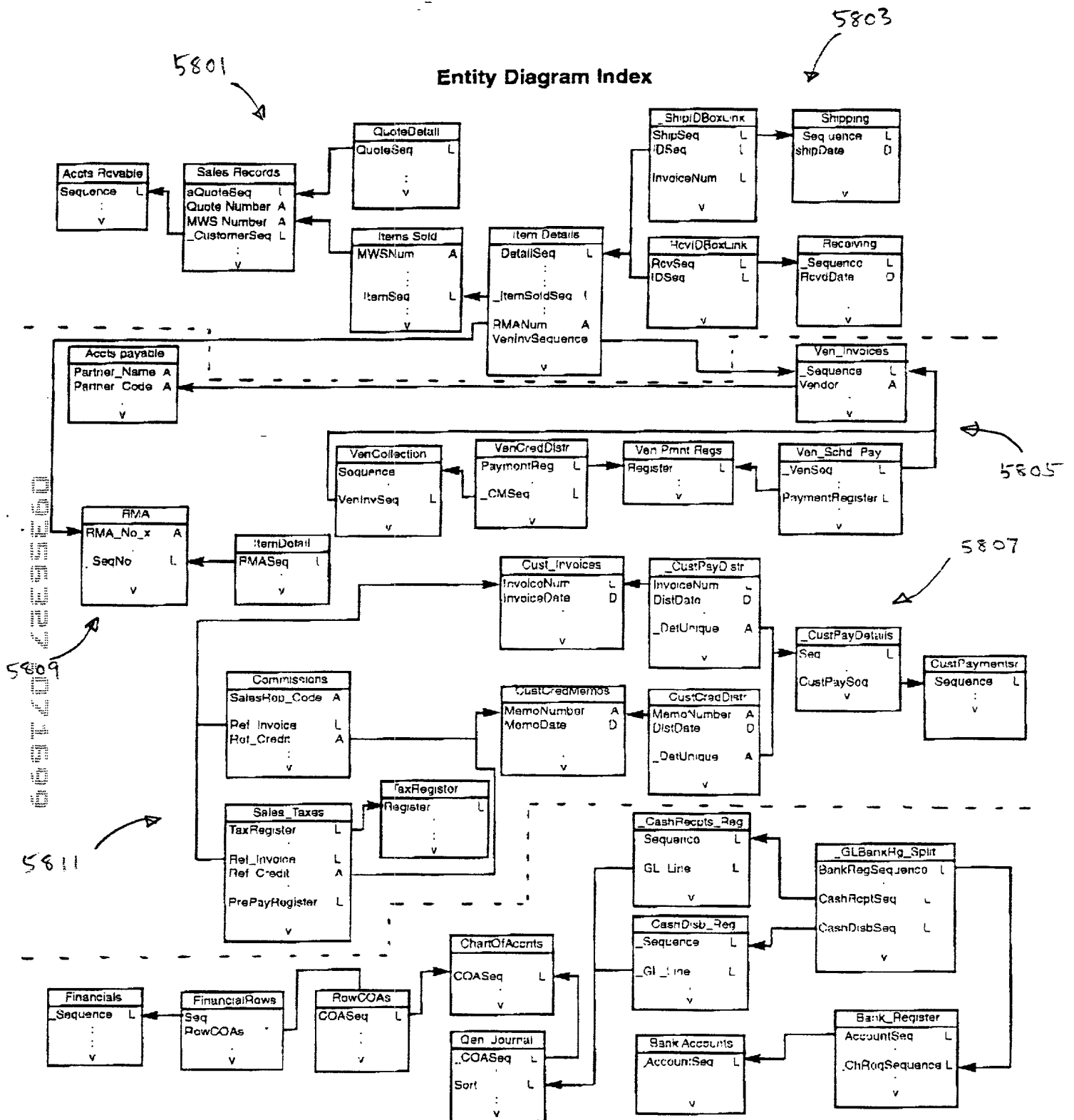


FIG 58

<input type="checkbox"/> Fast Disp	Sort	Sels	Searches	New Records	Return	Related Switch	QuickSwitch	Options	<input type="checkbox"/> Clear on

6101

Company	5/22/97		08/00/00
FIRST DEPOSIT	Contact person & Phone No KURT KICKERT (415) 222-7512		
Customer notes (do not appear on MVS)	Notes that fit in box will fit on printouts of quotes. Customer notes only print out on quotes.		
MVS comments (do not appear on Quotes)	Reviewed by	Temporary notes	
Comments that fit in box will fit on printouts of MVS. MVS comments only print out on MVS.			
Shipping notes	Backup notes		

16 62

3:26 PM

File Edit Enter Select Reports Mega Activities

Products: 156850 of 156850 (Sales MUUS)

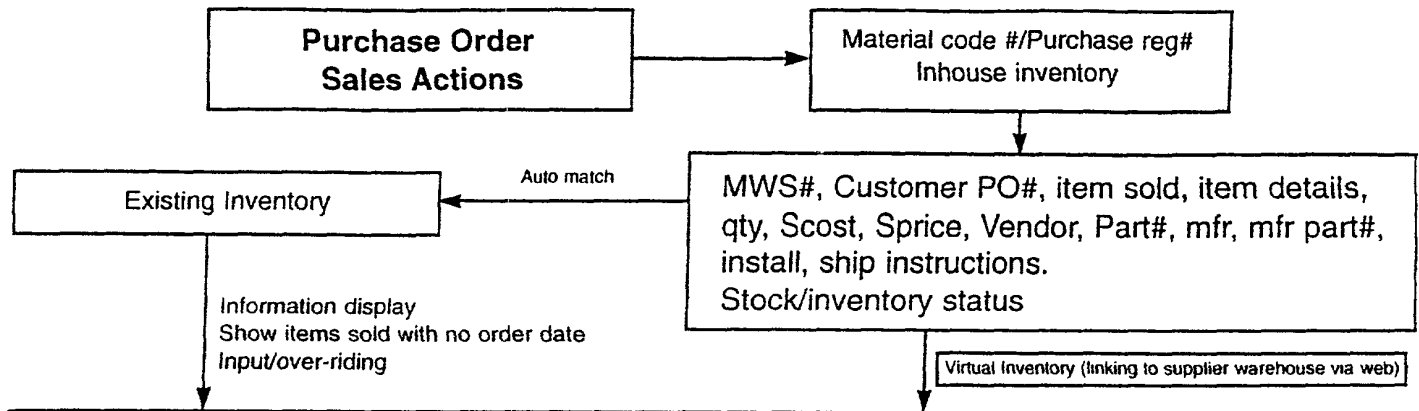
• - new product or special offer

Dealer prices include reseller markup

Description	Qty	Part No.	Media Cd	Platform	Manufacturer	Misc Part No	Dealer Price	Retail Price	Base Price	
ACCEL GRAPHICS AG500-010							2,889.09	3,495.00	2,804.95	
Compld		ACCL-404072	INTL	PC/AT	WYLE LABORATORY	AG500 010		12/1/96	Import	Distinct
16MB KIT F/HP VECTRA VL/4							108.50	149.00	105.34	
Compld		ADH0-80416			ADH0R MEMORY LTD	ADH16 3647		12/1/96	Import	Distinct
32MB F/HP OMIBOOK 5000							284.15	349.00	275.88	
Compld		ADH0-81136			ADH0R MEMORY LTD	ADH32 1136		12/1/96	Import	Distinct
PHOTOSHOP 3.0 MAC/POWERPC DISK/CD * DROP SHIP ONLY TO BRANCH *0091 **							188.00	279.00	182.53	
Compld		ADOB-023702			DOUGLAS STEWART CORP/AT	23702		12/1/96	Import	Distinct
FRAMEMAKER UPGRADE FOR WIN 5 11 *SERIAL NUMBER REQUIRED*							205.62	205.00	199.64	
Compld		ADOB-N1294			ADOBE SYSTEMS, INC	2791 0017		12/1/96	Import	Distinct
81MB LP 486 SIMM KIT W/GOLD LEAD							113.66	170.00	110.35	
Compld		AMG-B7040			ATLANTIC MEMORY GROUP II	10170040		12/1/96	Import	Distinct
32MB UPGRADE F/LP 486 W/GOLD LEAD							309.98	465.00	300.96	
Compld		AMG-B7050			ATLANTIC MEMORY GROUP II	10170050		12/1/96	Import	Distinct
81MB KIT F/LP 486 WITH TIN LEAD							92.99	139.00	90.29	
Compld		AMG-B7100			ATLANTIC MEMORY GROUP II	10170100		12/1/96	Import	Distinct
81MB CLASSIC R+ MODULE							77.49	115.00	75.24	
Compld		AMG-B7222			ATLANTIC MEMORY GROUP II	10170222		12/1/96	Import	Distinct
SAFEJACK ADAPTER DUAL RJ11							12.40	19.00	12.04	
Compld		ANG0-J0194			ANGIA CORPORATION	SJADP		12/1/96	Import	Distinct
UPS MONITORING BOARD W/CABLE, ISA							47.55	89.00	46.15	
Compld		APC-C677U			AMERICAN POWER CONVERSION	AP9500		12/1/96	Import	Distinct
NOVELL INTERFACE CABLE MICRO CHANNEL							20.66	39.00	20.06	
Compld		APC-C678U			AMERICAN POWER CONVERSION	AP940 0012		12/1/96	Import	Distinct
MATRIX CASTERS							71.29	106.00	69.22	
Compld		APC-H0006			AMERICAN POWER CONVERSION	PKA006		12/1/96	Import	Distinct
SURGE MOD P7, 7 OUTLETS, 3' CORD UI 1449 (400V) CSA APPROVED, 15 AMP							6.20	14.99	6.02	
Compld		APC-H0007			AMERICAN POWER CONVERSION	P7		12/1/96	Import	Distinct
NOTEBOOK SURGE PROTECTOR RJ11 CORD							11.37	29.99	11.04	
Compld		APC-H0008			AMERICAN POWER CONVERSION	PH01E1		12/1/96	Import	Distinct
PROTECTNET NETWORK SURGE PROTECTOR ETHERNET 10BASE-T							16.53	39.95	16.05	
Compld		APC-H0010			AMERICAN POWER CONVERSION	P10BT		12/1/96	Import	Distinct
WALLMOUNT BRACKET							19.63	29.00	19.06	
Compld		APC-H0013			AMERICAN POWER CONVERSION	AP013		12/1/96	Import	Distinct
TELEPHONE/MODEM PROTECT/NET DATA LINE SURGE SUPPRESSION							46.49	89.99	45.14	
Compld		APC-H0014			AMERICAN POWER CONVERSION	PTL1-4		12/1/96	Import	Distinct
01/FAX							36.82	79.00	36.82	
Merisel 25472			DK3	IBM PC	01 COMPLINI	21-001392		3/15/97	Import	Distinct
01/FAX FOR WORKGROUPS							230.34	399.00	230.34	
Merisel 25842			DK3	IBM PC	01 COMPLINI	21-001892		3/15/97	Import	Distinct

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Company	Q-930020	M-930002
	12/28/92	12/29/92
FUJITSU-ICL SYSTEMS, INC.	Contact person & Phone No Gerty Binkhorst (408) 982-3350	
Customer notes (do not appear on MWS)	Notes that fit in box will fit on printouts of quotes. Customer notes only print out on quotes.	Temporary notes
MWS comments (do not appear on Quotes)	Reviewed by	
Comments that fit in box will fit on printouts of MWS MWS comments only print out on MWS		
Shipping notes	Backup notes	
0		



PSRI Output Display (Purchasing)

Summary () Total () Working

Total PO = _____ Total vendor = _____ Total item sold = _____ Total qty = _____
 Total MWS = _____ Total mfr. = _____ Total item details = _____ Total amount = _____

Line #	Date	Cust. PO No.	MWS No.	Item sold Description	S cost	Qty	P cost	Stock Status	ETA	Sales Confirmation	Ship	Vendor	p/n	mfr.	mfr. p/n	Install Group
1	10/11/97	1556-WX	28515	Compaq SCSI HD Critical		5		B/O	12/11/97	Credit card	NP	Techdata	12345	Compaq	121-001	1
2	10/11/97	1556-WX	28515	Compaq proline track		24		B/O			P	Techdata	13554	Compaq	121-002	1
3	10/11/97	1556-WX	28515	Compaq memory		10		stock			NP	Mensel	13554	Compaq	121-003	1
4	10/11/97	1444PA	28415	HP Vectra		3		short stock		COO	P	Ingram Micro	13554	HP	HF-001	2
5	10/11/97	1444PA	28415	HP memory		4		Inventory			P	Microage	13554	HP	1F-001	2
6	10/11/97	1444PA	28415	HP Printer Drop Ship		200		B/O			NP	Computer land	13554	HP	H1-0Aa	2

= All headings are sortable.

All items are selectable and expand (double click) into item details. * Replacement MWS = Red color

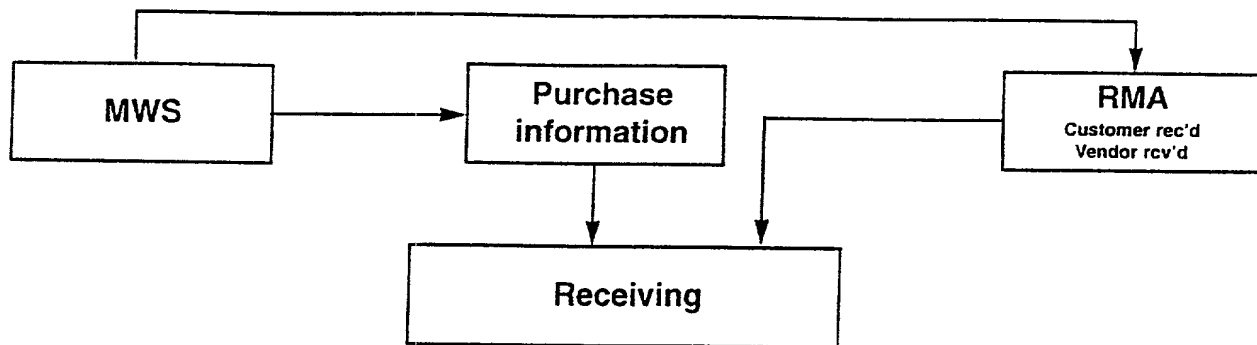
Actions:

- Grouping — B/O Short Stock Install Ship Vendor Mfr MWS include addendum
- Remove — Group Item sold Item details Install
- Cancel Change — Item sold MWS Shipping method - Drop ship Freight charge
- Split Hold — Item sold Double click item sold to item details and select/hold into group for new item sold
- Mark — Critical Drop Ship Mfr Special pricing Custom tracking Credit card purchase COO purchase

Purchase — Pcost Salesconfirmation # Auto PO assignment

Refresh to update PO that not been ordered

FIG 64



Double click to get specific receiving instruction.
Only show items sold with order date, but with no receive date.

PSRI Output Display (Receiving)

Summary () Total () Working

Total Customer PO = Total item sold = Total order = Receive =

Total MWS = Total item details = Total amount = Ship =

Line #	Date	Cust. PO No.	MWS No.	Cust. /Ven RMA#	Item sold Description	Qty	Order date	Sales Confirmation #	Status	Vendor	p/n	mfr.	mfr. p/n	Serial #	Receive Condition
1	10/11/97	1556-WX	28515		Compaq SCSI HD Critical	5	11/20/97	Credit card	Hold Note	Techdata	12345	Compaq			
2	10/11/97	1556-WX	28515		Compaq prokant Track	24	11/20/97		Refuse	Techdata	13554	Compaq			
3	10/11/97	1556-WX	28515		Compaq memory	10	11/19/97		ok	Mensel	13554	Compaq			
4	10/11/97	1444PA	28415		HP Vectra	3	11/20/97	COD	ok	Ingram Micro	13554	HP			
5	10/11/97	1444PA	28415		HP memory	4	11/21/97		ok	Microage	13554	HP			
6	10/11/97	1444PA	28415		HP Printer Drop ship	200	11/12/97		ok Note	Computerware	13554	HP			

[Icon] = All headings are sortable.

* All items are selectable and expand (double click) into item deals.

* Replacement MWS = Red color

Actions:

Receiving

1. Input Packing slip # Serial # Carrier Qty Term Boxes Conditions

2. Display Expected to receive No MWS

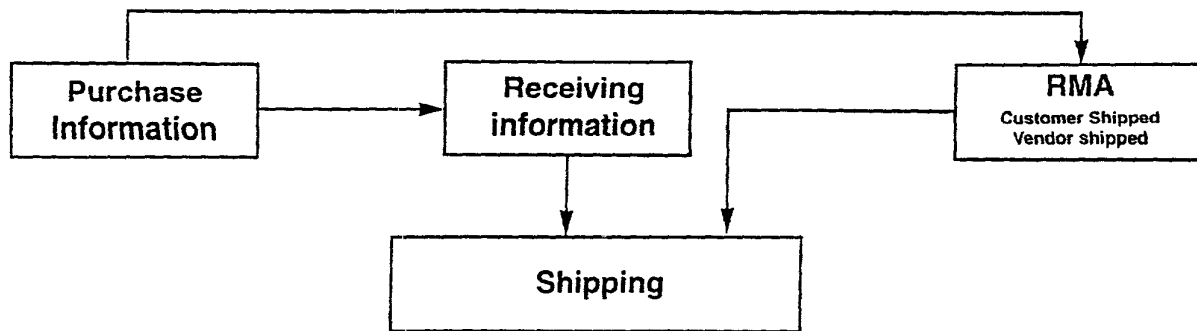
3. Notes

1. Expected to receive will exclude refusal items.

2. Expected to ship will exclude refusal items, hold items and items with COD/cash term.

3. Batch input for all packing slips and items. The system automatically match input with items that existing in the system to all items that received.

FIG 65



Double click to get specific shipping instruction.
Only shows items sold with received date, but with no ship date.

PSRI Output Display (Shipping)

Summary () Total () Working

Total Customer PO = _____ Total item sold = _____ Total order = _____ Receive = _____

Total MWS = _____ Total item details = _____ Total amount = _____ Ship = _____

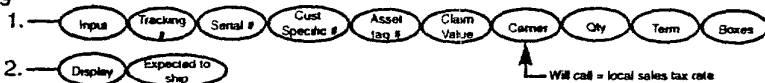
Line #	Date	Cust. PO No.	MWS No.	Cust. / Ven RMA#	Item sold Description	Qty	Order date	Receive date	Status	Vendor	p/n	mfr.	mfr. p/n	Serial #	Ship group
1	10/11/97	1556-WX	28515		Compaq SCSI HD Critical	5	11/20/97		Hold Notes	Techdata	12345	Compaq			
2	10/11/97	1556-WX	28515		Compaq proiant Track	24	11/20/97		Refuse	Techdata	13554	Compaq			
3	10/11/97	1556-WX	28515		Compaq memory	10	11/19/97		ok	Mersel	13554	Compaq			
4	10/11/97	1444PA	28415		HP Vecira	3	11/20/97		ok	Ingram Micro	13554	HP			
5	10/11/97	1444PA	28415		HP memory	4	11/21/97		ok	Microge	13554	HP			
6	10/11/97	1444PA	28415		HP Printer Drop ship	200	11/12/97		ok	Computerland	13554	HP			

= All headings are sortable.

* All items are selectable and expand (double click) into item details. * Replacement MWS = Red color

Actions:

Shipping



3. — Add freight charges (option) Notes.

- . Expected to receive will exclude refusal items.
- . Expected to ship will exclude refusal items, hold items and items with COD/cash term.
- . Batch input for all packing slips and items. The system automatically match input with items that existing in the system to all items that received.

FIG 67

Item details input

Select (highlight) to group



Item detail Display

Line #	Date	Cust. PO No.	MWS No.	Cust. / Ven RMA#	Item sold Description	Qty	Existing Status	Cust. Inv.	Ven. Inv.	Serial #	Vendor	mfr.	Install Group	Ship Group
1	10/11/97	1556-WX	28515		Compaq SCSI HD Critical	1	B/O							
2	10/11/97	1556-WX	28515		Compaq SCSI HD Critical	1	B/O							
3	10/11/97	1556-WX	28515		Compaq SCSI HD Critical	1	B/O							
4	10/11/97	1556-WX	28515		Compaq SCSI HD Critical	1	B/O							
5	10/11/97	1556-WX	28515		Compaq SCSI HD Critical	1	B/O							

[] = All headings are sortable.

- * All items are selectable and can be made into different groups.
- * Replacement MWS = Red color

Existing status can be ordered
Existing status can be received
Existing status can be shipped
Existing status can be installed

Unique installation note:

Unique shipping note:

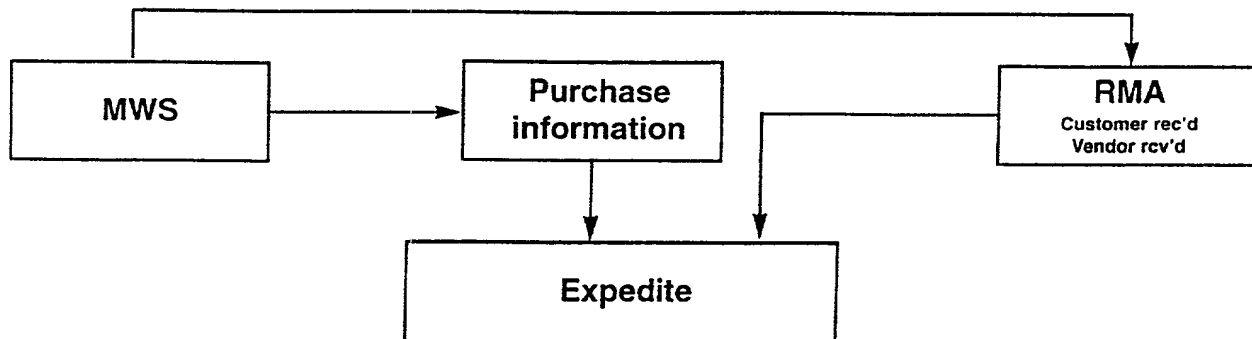
RMA installation note:

Standard default notes from customer file

Standard default shipping notes from vendor file

Shipping note:

FIG 68



Double click to get specific receiving instruction.
Only show items sold with order date, but with no receive date.

PSRI Output Display (Receiving)

Summary () Total () Working
 Total Customer PO = Total item sold = Total order = Receive =
 Total MWS = Total item details = Total amount = Ship =

line #	Date	Cust. PO No.	MWS No.	Cust. /Ven RMA#	Item sold Description	Qty	Order date	Sales Confirmation	Purchase ETA Status	Expedite ETA	Vendor	p/n	mfr.	mfr. p/n	Expedite Condition
1	10/11/97	1556-WX	28515		Compaq SCSI HD Critical	5	11/20/97		Hold Note		Techdata	12345	Compaq		
2	10/11/97	1556-WX	28515		Compaq prodata track	24	11/20/97		Refuse		Techdata	13554	Compaq		
3	10/11/97	1556-WX	28515		Compaq memory	10	11/19/97		ok		Merisel	13554	Compaq		
4	10/11/97	1444PA	28415		HP Vectra	3	11/20/97		ok		Ingram Micro	13554	HP		
5	10/11/97	1444PA	28415		HP memory	4	11/21/97		ok		Microage	13554	HP		
6	10/11/97	1444PA	28415		HP Printer Drop ship	200	11/12/97		ok Note		Computerland	13554	HP		

[Icon] = All headings are sortable.

All items are selectable and expand (double click) into item details. * Replacement MWS = Red color

Actions:

1. Expedite ETA

2. Mark Re-order Expedite Actions Note Detail

- Expected to receive will exclude refusal items.
- Expected to ship will exclude refusal items, hold items and items with COD/cash term.
- Batch input for all packing slips and items. The system automatically match input with items that existing in the system to all items that received.

FIG 69

Company - PO	MWS Num	Qty	Ord	Rev'd	Shpd	Description	Cost	Price	Expedite Status - exp date - cust notes	CSR Notes
PACBELL ISG	M-930008	1	1	1	1	CABLE			Ignore on future reports	FUTRUG
3 items 930107	1/7/93	Orig Shpd	3/22/93	3/22/93				8.00		
3 DON BAKER PG 510-806-7459										
LOCKED										
<p>Not Received Report 8/24/96 11:06 AM 00/00/00</p> <p> <input type="radio"/> Not Ordered Report <input checked="" type="radio"/> Not Received Report <input type="radio"/> Not Shipped Report <input type="radio"/> Drop ship Report <input type="radio"/> Filters On </p>										
Customer (66/66)(1)	P0#	Qty	Ord	Rev'd	Shpd	Age				
ORACLE	215198	5	100%	80%	0%	5				
ORACLE	215487	13	92%	61%	0%	3				
ORACLE	215514	1	100%	0%	0%	2				
ORACLE	215666	10	100%	10%	0%	2				
SILICON GRAPHICS INC	01C1019467	1	100%	0%	0%	8				
Silicon Systems	660301130	7	100%	85%	85%	632				
Symantec Corporation	125927LM	15	100%	93%	93%	75				
Symantec Corporation	125984SD	4	25%	0%	0%	75				
UC-BARTON	PPS072082	6	100%	83%	83%	35				
<p> <input type="checkbox"/> Ven On <input type="checkbox"/> Age On <input type="checkbox"/> Type <input type="checkbox"/> Qty <input type="checkbox"/> Ord <input type="checkbox"/> Rev'd Shpd </p>										
<p> <input type="checkbox"/> is older than _____ days <input type="checkbox"/> Customer Notes </p>										
<p> <input checked="" type="checkbox"/> Priority <input type="checkbox"/> Get MYS <input type="checkbox"/> Ven-Ctrl V P No-M P No <input type="checkbox"/> Ord-Rev'd <input type="checkbox"/> P0-Qty-A <input type="checkbox"/> Expedite Status </p>										
<p>Description</p>										
<p>POWERBOOK DUO 230</p>										
<p>2,455.44</p>										
<p>Ignore on future reports</p>										
<p>Options</p>										
<p>Return Related Switch QuickSwitch</p>										
<p>Fast Order</p>										

Company - PO	MVS Num	Qty	Ord	Rev'd	Shpd	Description	Cost	Price	Expedite Status - exp date - cust notes	CSR Notes
PACBELL ISO	M-930008	1	1	1	1	CABLE		8.00	Ignore on future reports	PHJHUG
3 Items 930107	1/7/93	Orig Shpd	3/22/93	3/22/93						
... 3 ... DON BAKER	PG 510-806-7459									
LOCKED										
Jet Population Laboratories	M-930003									
2 Items 000635262	1/5/93									
1 Deborah Williams (818) 397-718										
LOCKED										
PACBELL ISO	M-930008									
3 Items 930107	1/7/93									
2 DON BAKER	PG 510-806-7459									
LOCKED										
930107	1/7/93									
LOCKED										
BEEBOY FILE	M-930007									
5 Items XXXXXXX	1/6/93									
5 MAUDELE(415) 751-4020										
LOCKED										
XXXXXXX	1/6/93									
LOCKED										
FLUITSU-CL SYSTEMS, INC	M-930002									
1 Items 11613	1/2/92									
1 Gerry Binkhorst (408) 982-3350										
LOCKED										
BEEBOY FILE	M-930007									
5 Items XXXXXXX	1/6/93									
2 MAUDELE(415) 751-4020										
LOCKED										

Customer (13/13)	PO#	Qty	Ord	Rev'd	Shpd	Age	Filters On
UNION BANK OF CALIFORNIA	6310010275	8	12%	12%	0%	63	<input type="checkbox"/> Customer Filter On
UNION BANK OF CALIFORNIA	6310010501	4	75%	25%	0%	42	<input type="checkbox"/> At least
UNION BANK OF CALIFORNIA	6310010517	13	100%	76%	53%	43	<input type="checkbox"/> Percent Filter On
UNION BANK OF CALIFORNIA	6310010683	43	86%	86%	81%	21	<input type="checkbox"/> Qty is or less
UNION BANK OF CALIFORNIA	6310010807	24	100%	95%	87%	10	<input type="checkbox"/> Qty Filter On
UNION BANK OF CALIFORNIA	6310010836	10	100%	10%	0%	2	<input type="checkbox"/> More than days old
UNION BANK OF CALIFORNIA	6310010904	49	100%	61%	0%	2	<input type="checkbox"/> Age Filter On
UNION BANK OF CALIFORNIA	6310010905	5	100%	20%	0%	2	
UNION BANK OF CALIFORNIA	6310010907	14	100%	64%	42%	4	

MVS	Type	Qty	Ord	Rev'd	Shpd
M97-25680	Cus-Np	8	1	1	0
M97-25920	Cus-Np	4	3	1	0
M97-25899	Cus-pOK	13	13	10	7
M97-26056	Add-Np	8	2	2	0

Expected Description (40)	Ven-Ctrl	V PNo-M PNo	Rev'd	Shpd	PO-Qty-A	Expedite Status
PREM PNTR CBL 25M/C36M 10	Inhouse	1602-10	00/00/00-0	1	42 days	
PREM PNTR CBL 25M/C36M 10	Inhouse	1602-10	00/00/00-0	2	41 days	
Installation INSTALL MEM	Inhouse	1602-10	00/00/00-0	2	41 days	
UPGRADE AND TOKEN RING	Inhouse	1602-10	00/00/00-0	6	42 days	
Installation	Inhouse	1602-10	00/00/00-0	1	41 days	
Installation HARD DRIVE, RAM	Inhouse	1602-10	00/00/00-0	1	41 days	
AND BURN IN 48 HOURS	Inhouse	1602-10	00/00/00-0	1	41 days	
Installation	Inhouse	1602-10	00/00/00-0	1	42 days	

Searches	Sort	Set	Return	Related Switch	Quick Switch	Options	Fast Order
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Company - PO	MFGNum	Qty	Ord	Rev'd	Shpd	Description	Cost	Price	Expedite Status - exp date - cust notes	CSR Notes
PACBELL ISG	M-9300008 NoP	1	1	1	1	CABLE			Ignore on future reports	FHJFHJG
3 Items 930107	1/7/93 Orig Shpd	3/22/93	3/22/93					8 00 c/w		
3 DON BAKER	PG 510-806-7459				TBD					
LOCKED										
Jet Propulsion Laboratories	M-9300003 NoP	1	1	1	1	ULTRA 144, 14400BPS, EXT, V32 BIS	554 28		00/00/00	
2 Items 930107	1/5/93 Dest Shpd	3/22/93	3/22/93					595 00 c/w	Back order	
1 Deborah Williams	(818) -397-7164				OnPnd	HAYS-1527D		08-00713		
LOCKED										
PACBELL ISG	M-9300008 NoP	1	1	1	1	POSTSCRIPT LEVEL II CARTRIDGE F/LJ	404 76		In Transit	
3 Items 930107	1/7/93 Orig Shpd	3/22/93	3/22/93					450 00 c/w		
2 DON BAKER	PG 510-806-7459				OnPnd	HPCD-1622U		C2089A		
LOCKED										
930107	1/7/93	Shpd	3/22/93	3/22/93	1	LAST			are on future reports	
LOCKED										
BEEBOY FILE	M-9300007 NoP	1	1	1	1	MAC			/00/00	
5 Items XXXXXXX	1/6/93 Orig Shpd	3/22/93	3/22/93						are on future reports	
5 MAUDELL(415) 751-4020					OnPnd	APPL-10340			/00/00 TESRT	
LOCKED									are on future reports	
XXXXXX	1/6/93	Shpd	3/22/93	3/22/93	1	RECH				
LOCKED										
XXXXXX	1/6/93	Shpd	3/22/93	3/22/93	1	MAC			/00/00	
LOCKED									are on future reports	
FUJITSU-ICL SYSTEMS, INC	M-9300002 NoP	1	1	1	1	QEM			/00/00	
1 Items 11613	12/29/92 Orig Shpd	6/3/93	3/22/93						are on future reports	
1 Gerry Binkhorst	(408) 982-3350	4444			MicroB	307535				
LOCKED										
BEEBOY FILE	M-9300007 NoP	1	1	1	1	POW			5/93	
5 Items XXXXXXX	1/6/93 Orig Shpd	3/22/93	3/22/93						are on future reports	
2 MAUDELL(415) 751-4020					OnPnd	APPL-A0883				
LOCKED									/00/00	
									are on future reports	

Select a status...

Status

3rd order

Cancelled

Credit hold

Direct ship from Mincir

Discontinued

Drop shipped

Hand Dlyr

Ignore on future reports

In Transit

Installation

Lost in Transit

No record of order

Not released new product

On allocation

Open source complete

Open source required

Order hold

Other

Partial ship

Replacement

Ship to wrong address

Shipped

Urgent

Vendor follow up

Wrong Product

OK

Cancel

T 1672

FG 73

File Edit Enter

Mega Activities

Sales Records: Add RMA record

RMA Case No. Temp65-1		Date 9/25/97		Vendor RMA No. <input type="checkbox"/> NA										
Customer SAN FRANCISCO SYMPHONY		Tel: (415) 552- 8000 FAX: (415) 431- 6857												
Address SAN FRANCISCO SYMPHONY DAVIES SYMPHONY HALL San Francisco, CA 94102 Attention: DAVID MURDOCH		Buyer: _____												
Bill To click button to toggle bill/ship addresses.		Tel: _____ FAX: _____												
MVS No. M93-0065		User: _____ Tel: _____ FAX: _____												
PO No. SUSAN2993		CSR PaulB												
Qty: 1 Desc: WORDPERFECT 5.1 + FILE SRV		Date Purch 3/22/93												
PN: F2USIN/PS1		<input type="checkbox"/> Customer will pay partial <input type="checkbox"/> Not in resale condition												
<table border="1"> <thead> <tr> <th>Orig Rev D</th> <th>Orig Ship D</th> <th>Serial No</th> <th>Misc II</th> </tr> </thead> <tbody> <tr> <td>08/22/93</td> <td>08/22/93</td> <td></td> <td></td> </tr> </tbody> </table>		Orig Rev D	Orig Ship D	Serial No	Misc II	08/22/93	08/22/93			Return type _____			Reason _____	
Orig Rev D	Orig Ship D	Serial No	Misc II											
08/22/93	08/22/93													
<table border="1"> <thead> <tr> <th>Unit price</th> <th>RMA total price</th> </tr> </thead> <tbody> <tr> <td>255.00</td> <td>255.00</td> </tr> </tbody> </table>		Unit price	RMA total price	255.00	255.00	RstK % _____ RstK Chrg _____			<input type="checkbox"/> Customer Acknowledged					
Unit price	RMA total price													
255.00	255.00													
Explanation and Notes		Replacement PO _____												
		Replacement MVS: _____												

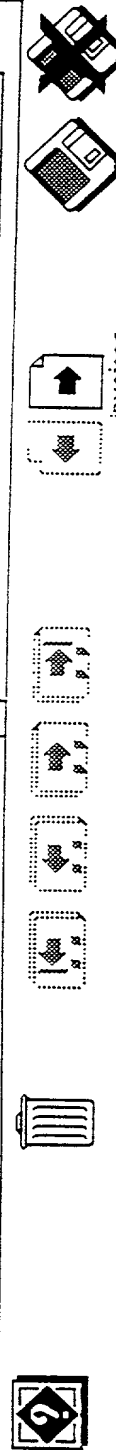


Fig 74

Fig 75

V = Vendor whom we bought from or mfr. of product.
C = Customer

Spectrum of N/A

1. If received, ship, claim & credit = NA, then return type must be equal to Not Applicable.

Return type/Action (C & V)	Active	Repair/ replace part # Y/N	Service On site Y/N	\$ On site Charge	\$ Additional repair Charge	Mfr. or vendor		RMA#	Rec'd	Ship	Credit	Claim	Cust Ong ship date req'd	Fax return Form (PR)	E-mail notification	Show web	Repl MWS		
						Drop Ship	Cross Ship												
1. Credit	Check	Y	N/A	N/A	N/A	N/A	N/A		N/A			N/A	N/A	Y	Y	Y	N	V	
		Y	N/A	N/A	N/A	N/A	N/A			N/A		N/A	Y	Y	Y	Y	N	C	
	Credit card	Y	N/A	N/A	N/A	N/A	N/A		N/A			N/A	Y	Y	Y	Y	N	V	
		Y	N/A	N/A	N/A	N/A	N/A			N/A		N/A	Y	Y	Y	Y	N	C	
	Credit memo	Y	N/A	N/A	N/A	N/A	N/A		N/A			N/A	Y	Y	Y	Y	N	V	
		Y	N/A	N/A	N/A	N/A	N/A			N/A		N/A	Y	Y	Y	Y	N	C	
2. Exchange	Y	N/A	N/A	N/A	N/A	Y/N	Y/N		N/A			N/A	N/A	Y	Y	Y	Y	V	
Mirror C & V										N/A		N/A	Y				Y	C	
3. Repair/replace(on/off site)																			
Mirror C & V	Under warranty part/exchange required	Y	Y/N	Y/N	Y/N	NA	Y/N	Y/N				N/A	N/A	Y	Y	Y	N	V	
		Y	Y/N	Y/N	Y/N	NA	Y/N	Y/N				N/A	Y	Y	Y	Y	N	C	
	Under warranty part not req'd	Y	Y/N	Y/N	Y/N	NA	N/A	N/A	N/A	N/A	N/A	N/A	Y	Y	Y	Y	N	V	
		Y	Y/N	Y/N	Y/N	NA	N/A	N/A	N/A	N/A	N/A	N/A	Y	Y	Y	Y	Y	N	C
	Out of warranty part required	Y	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	N/A	N/A	N/A	N/A	Y	Y	Y	Y	Y	Y	V
		Y	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	N/A	N/A	N/A	N/A	Y	N/A	Y	Y	Y	C	
	Out of warranty part not req'd	Y	Y/N	Y/N	Y/N	Y/N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	Y	Y	V	
		Y	Y/N	Y/N	Y/N	Y/N	N/A	N/A	N/A	N/A	N/A	N/A	Y	N/A	Y	Y	Y	C	
4. Ship	wrong address	Y	N/A	N/A	N/A	N/A	Y/N	N/A		N/A	N/A	N/A	N/A	Y	N/A		N	V	
		Y	N/A	N/A	N/A	N/A	Y/N	N/A		N/A		N/A	Y	Y	N/A		N	C	
	Refused	Y	N/A	N/A	N/A	N/A	N/A	N/A		N/A		N/A	N/A	N/A	N/A	N/A	N	V	
		Y	N/A	N/A	N/A	N/A	N/A	N/A		N/A		N/A	Y	N/A	N/A	N/A	N	C	
	Lost	Y	N/A	N/A	N/A	N/A	Y/N	Y/N	N/A	N/A	N/A		N/A	N/A	N/A	N/A	Y	V	
		Y	N/A	N/A	N/A	N/A	Y/N	Y/N	N/A	N/A	N/A		Y	N/A	N/A	N/A	N	C	
	Ship damaged	Y	N/A	N/A	N/A	N/A	Y/N	Y/N					N/A	Y	Y	N/A	Y	V	
		Y	N/A	N/A	N/A	N/A	Y/N	Y/N					Y	Y	Y	N/A	C		
	missing compo- nents	Y	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	V	
		Y	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N					Y	N/A	N/A	N/A	N	C	
Duplicate ship	Y	N/A	N/A	N/A	N/A	Y/N	N/A		N/A		N/A	N/A	Y	Y	Y	N/A	V		
	Y	N/A	N/A	N/A	N/A	Y/N	N/A		N/A		N/A	Y	Y	Y	N/A	N	C		
Inventory	Y	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A	N/A	N	V	
	Y	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N	N/A	N/A	N/A	N	C	
5. Never ship, stay in warehouse	Cancel order/shipment	Y	N/A	N/A	N/A	N/A	N/A	N/A		N/A		N/A	N/A	N/A	N/A	N/A	N	V	
		Y	N/A	N/A	N/A	N/A	N/A	N/A		N/A		N/A	N	N/A	N/A	N/A	N	C	
	Transferred order	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	V	
		Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	N/A	N/A	N	C	
	Never ship to customer	Y	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	V	
		Y	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N	N/A	N/A	N/A	N	C	
6. Not applicable	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	V	
	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	N/A	N/A	N	C	
7. Other	Y	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N					N/A	Y	Y	Y		V	
	Y	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N					N/A	Y	Y	Y		C	

Limit File (Customer or Vendor)

Automatic Approval Intelligence

Groups											
		Mfr.			Vendor		Customer				
Return type/Action (C & V)	Allow auto Approval	Mfr. Allow Return	Mfr. allow Open Box	Exceed Mfr allow max Time Duration	Exceed Vendor allow max time Duration	Vendor Restock Fee	Exceed Customer Allow time duration	Charge Restock fee	exceed Spnce limit	Charge Service fee	
1. Credit Check	Y	Y	Y	N	N	NA	N	N	N	N/A	
Credit card	Y	Y	N	Y	N	NA	N	N	N	N/A	
Credit memo	N	N	NA	NA	NA	NA	NA	NA	NA	N/A	
2. Exchange	Y	Y	N	N	N	NA	N	N	N	N/A	
Mirror C & V	Y		N	N	N	NA		Y	N	N/A	
3. Repair/replace (on/off site)											
Mirror C & V	Under warranty part/exchange required	Y	N/A	N/A	N	NA	N/A	N/A	N/A	N/A	N
	Under warranty part not req'd	Y	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	Y
	Out of warranty part required	Y	N/A	N/A	N	N/A	NA	N/A	N/A	N/A	Y
	Out of warranty part not req'd	Y	N/A	N/A	N	N/A	NA	N/A	N/A	N/A	Y
4. Ship											
wrong address	Y	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	
Refused	Y	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	
Lost	Y	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	
Ship damaged	Y	N/A	N/A	N	N	N/A	N	N/A	N/A	N/A	
missing compo- nents	Y	N/A	N/A	N	N/A	N/A	N	N/A	N/A	N/A	
Duplicate ship	Y	N/A	N/A	Y	N/A	N/A	N/A	Y	N/A	N/A	
Inventory	Y	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	
5. Never ship, stay in warehouse											
Cancel order/shipment	Y	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	
Transferred order	Y	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	
Never ship to customer	Y	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	
6. Cust. Not applicable	Y	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	
7. Other											

FIG 77

Customer File Auto RMA Approval

Automatic Approval Criteria

Return type/Action (C & V)	Preset time allow between Orig. ship date & RMA request date	Restock Fee	Max allow time = Vendor max time	S price max	Service fee for On-site	Exceed \$ return limit	Exceed agreed return period
1. Credit Check	Range	Range	NA	NA	Range/Y/N	Amount	Days
Credit card	Range	Range	NA	NA	Range/Y/N	Amount	Days
Credit memo	Range	Range	NA NA	NA	Range/Y/N	Amount	Days
2. Exchange Mirror C & V	Range	Range	NA NA	NA	Range/Y/N	Amount	Days
3. Repair/replace (on/off site)	Range	Range	NA NA	NA	Range/Y/N	Amount	Days
Mirror C & V	Under warranty part/exchange required	NA	NA	NA	Range/Y/N	NA	NA
	Under warranty part not req'd	NA	NA	NA	Range/Y/N	NA	NA
	Out of warranty part required	NA	NA	NA	Range/Y/N	NA	NA
	Out of warranty part not req'd	NA	NA	NA	Range/Y/N	NA	NA
4. Ship	wrong address	NA	NA	NA	NA	NA	NA
	Refused	NA	NA	NA	NA	NA	NA
	Lost	Range	NA	NA	NA	NA	NA
	Ship damaged	Range	NA	NA	NA	NA	NA
	Missing compo- nents	Range	NA	NA	NA	NA	NA
	Duplicate ship	Range	NA	NA	NA	NA	NA
	Inventory	NA	NA	NA	NA	NA	NA
5. Never ship, stay in warehouse	Cancel order/shipment	NA	NA	NA	NA	NA	NA
	Transferred order	NA	NA	NA	NA	NA	NA
	Never ship to customer	NA	NA	NA	NA	NA	NA
6. Cust. Not applicable	NA	NA		NA	NA	NA	NA
7. Other							

New rules:

1. Return type must be create in duplicate (pair) for Vendor & Customer (V & C).
2. Allow changes only of return detail on either V or C. One return detail must remain unchanged (creation keys).
3. Return type can be different for vendor & customer on the same RMA.
4. Option to block use of any return type.
5. Original ship date as guide for proper selection of return type.
6. Create default setup initially.

FIG 78

Vendor File Auto RMA Approval

Automatic Approval Criteria

Return type/Action (C & V)	Return allowed	Allowable Max date vendor time	Restock Fee
1. Credit Check	Y/N	Limit	Range
Credit card	Y/N	Limit	Range
Credit memo	Y/N	Limit	Range
2. Exchange	Y/N	Limit	Range
Mirror C & V	Y/N	NA	NA
3. Repair/replace(on/off site)	Y/N	NA	NA
Under warranty part/exchange required	Y/N	NA	NA
Under warranty part not req'd	Y/N	NA	NA
Out of warranty part required	Y/N	NA	NA
Out of warranty part not req'd	Y/N	NA	NA
4. Ship	Y/N	Limit	Range
wrong address	Y/N	Limit	Range
Refused	Y/N	Limit	Range
Lost	Y/N	NA	NA
Ship damaged	Y/N	Limit	Limit
missing compo- nents	Y/N	NA	NA
Duplicate ship	Y/N	NA	NA
Inventory	Y/N	NA	NA
5. Never ship, stay in warehouse	Y/N	NA	NA
Cancel order/shipment	Y/N	NA	NA
Transferred order	Y/N	NA	NA
Never ship to customer	Y/N	Limit	Limit
6. Cust. Not applicable	Y/N	NA	NA
7. Other	Y/N		

New rules:

1. Return type must be create in duplicate (pair) for Vendor & Customer (V & C).
2. Allow changes only of return detail on either V or C. One return detail must remain unchanged (creation keys).
3. Return type can be different for vendor & customer on the same RMA.
4. Option to block use of any return type.
5. Original ship date as guide for proper selection of return type.
6. Create default setup initially.

FIG 79

Mfr. File Auto RMA Approval

Automatic Approval Criteria

Return type/Action (C & V)	Return allowed	Open return allowed	Max time to return	Max time to Warranty service on-site	Max time to Warranty service off-site
1. Credit Check	Y	Y/N	Limit	NA	NA
Credit card	Y	Y/N	Limit	NA	NA
Credit memo	Y	Y/N	Limit	NA	NA
2. Exchange Mirror C & V	Y	Y/N	Limit	NA	NA
3. Repair/replace (on/off site)	Y		Limit	NA	NA
Mirror C & V Under warranty part/exchange required	Y	NA	NA	Limit	Limit
Under warranty part not req'd	Y	NA	NA	Limit	Limit
Out of warranty part required	Y	NA	NA	NA	NA
Out of warranty part not req'd	Y	NA	NA	NA	NA
4. Ship wrong address	Y	NA	Limit	NA	NA
Refused	Y	NA	Limit	NA	NA
Lost	Y	NA	Limit	NA	NA
Ship damaged	Y	NA	Limit	NA	NA
missing compo- nents	Y	NA	NA	NA	NA
Duplicate ship	Y	NA	Limit	NA	NA
inventory	Y	NA	Limit	NA	NA
5. Never ship, stay in warehouse Cancel order/shipment	Y	NA	Limit	NA	NA
Transferred order	Y	NA	NA	NA	NA
Never ship to customer	Y	NA	Limit	NA	NA
6. Cust. Not applicable	Y	NA	Limit	NA	NA
7. Other	Y	NA	Limit	NA	NA

New rules:

1. Return type must be create in duplicate (pair) for Vendor & Customer (V & C).
2. Allow changes only of return detail on either V or C. One return detail must remain unchanged (creation keys).
3. Return type can be different for vendor & customer on the same RMA.
4. Option to block use of any return type.
5. Original ship date as guide for proper selection of return type.
6. Create default setup initially.

FIG 80

Return Merchandise Processing

Your return request(s) have been approved..

R-232421 is your RMA number.

If you want to exchange for a new product, please click Products below.
Please remember to check replacement option when you are ready to submit your replacement order.

Please use the following links if you wish to leave the current screen and move on.

[Products](#)

[Returns/Repair](#)

[Tracking](#)

[Log Off](#)

[Home](#)

FIG 81

0035327 071690
003720 2229560

069100 00000000

TanRegister: Modify Records

TanRegister

2nd Qtr 1996

Pay

Recalc/Save

State CA	Period 4/1/96 - 6/30/96	Amount Due	Amount Paid
Total Taxes		25,636.00	
Total Taxes		4,116.00	
Total Taxes		15,345.00	
Total Taxes		10,001.00	
Total Taxes		524.00	
Total Taxes		683,602.00	
Total Taxes		261,059.00	

Line	Item	Amount
1	Purchases subject to use tax	
2	Total (add lines 1 and 2)	
3	Sales to other retailers for purposes of resale	
4	Non-taxable sales of food products	
5	Non-taxable labor (repair and installation)	
6	Sales to the United States Government	
7	Sales in interstate or foreign commerce	
8	Sales tax (if any) included on line 1	
9		

Ref	Date	City	County	Zip	Net Sale	Customer
	4/30/96	Sunnyvale	Sunnyvale	94086		
	Internal Use 645.50					
	5/31/96	Sunnyvale	Sunnyvale	94086		
	Internal Use 1,687.58					
9999	4/1/96	Redwood City	Redwood City	94065	4,042.00	ORACLE
	Gr. Sales 4,375.47					
9998	4/1/96	Redwood City	Redwood City	94065	5,940.00	ORACLE
	Gr. Sales 6,430.05					
9997	4/1/96	San Francisco	San Francisco	94105	8,583.00	FIRST DEPOSIT
	Internal Use 350.22					

FORMULA OR FIELDS TO USE IN QUICK REPORT OF SALES TAX FILE

- Line 1(Col4) GrossSale - PriceCredit
- Line 2(Col4) InternalUse
- Line 3(Col4) Line1(Col4) + Line2(Col4)
- Line 4(Col3) Resale+ResaleAdjust
- Line 5(Col3) FoodProducts + FoodAdjust
- Line 6(Col3) Installation
- Line 7(Col3) GovernmentSale + GovernmentAdjust
- Line 8(Col3) OutOfState + OutOfStateAdj
- Line 9(Col3) SalesTaxDbltd
- Line 10(Col3) BadDebt
- Line 11(Col3) ResoldIntUse
- Line 12(Col3) ReturnItems
- Line 13(Col3) Discounts
- Line 14(Col3) Line 10e box 60(Col3) - Not calculated
- Line 15(Col3) Line 10e box 60(Col3) * 0.8333
- Line 16(Col3) Freight
- Line 17(Col3) Sum of Line4(Col3) thru Line10f(Col3)
- Line 18(Col3) Line3(Col4) - Line11(Col4)
- Line 19(Col3) Line12(Col4) * 0.06
- Line 20(Col3) Line10e 61(Col3) + Line12(Col4)
- Line 21(Col3) Line14a 61(Col4) * 0.0025
- Line 22(Col3) Not calculated
- Line 23(Col3) Line14a(Col4) + Line15(Col4)
- Line 24(Col3) Line16(Col4) * 0.01
- Line 25(Col3) CountyTax (Register gets amount from sum of ColB)
- Line 26(Col3) Line13(Col4) + Line 14b(Col4) + Line 17(Col4) + Line 18(Col4)
- Line 27(Col3) OutOfStateTaxPaid
- Line 28(Col3) CountyTaxableT1
- Line 29(Col3) Line 20c(Col3) * 0.0075
- Line 30(Col3) CountyTaxableT1
- Line 31(Col3) Line 20c(Col3) * 0.0075
- Line 32(Col3) Line 20c(Col3) * 0.0075
- Line 33(Col3) Line 19(Col4) - Line20a(Col4) - Line20e
- Line 34(Col3) Actual prepayment from 1st prepayment register
- Line 35(Col3) Actual prepayment from 2nd prepayment register
- Line 36(Col3) Line22(Col3) + Line23(Col3)
- Line 37(Col3) Not calculated
- Line 38(Col3) Line 24(Col4) - Line25(Col4)
- Line 39(Col3) Line23(Col4) + Line24(Col4) + Line25(Col4)

Schedule A

- Line A1(Col4) Line16(Col4)
- Line A2/A3(Col4) GrossSale+InternalUse
- Line A4(Col4) LineA1(Col4) - LineA2/A3(Col4)
- Counties(Col3) CountyTaxableT1
- Counties(Col6) Counties(Col3)
- Counties(Col7) Tax Table
- Counties(Col8) CountyTax (Register gets from Counties(Col6) * Counties(Col7))

Fig 82

FIG 3

File Edit Enter Select Reports Mega Activities
11:18 AM 7/21

Invoice Date	Term	Type	Customer	Customer PU	MVS / g18 - Total PO - Invoiced	Left to pay	Age	Print-In-RTA	Credit Summary
10840	6/22/96		SRICOM GRAPHICS INC	MVS-22590	01C1014866		Age 46		
			NAD ACCOUNTS PAYABLE	(415) 333-6341	36743				
			Customer	01:1014866 P 36743					
			Printed	R-230572AP (Temp 22590-1) Approved 1/7/97					
10845	6/22/96		TRIST DEPOSIT	MVS-22512	16790-32726-2101	Close Paid	Age 46	Destination	
			Customer	(415) 272-7669					
			Printed	16790-32726-21012 P 4					
10844	6/22/96		ORACLE	MVS C ROORDU12	(415) 306-4209				
			Customer	(415) 633-2945					
			Printed	209-10					

Totals (3 invoices 0 credits)

Total Credits	4,261.52
Net Invoiced	3,923.00
Total Sales	245.31
Total Tax	50.00
Total Installation	43.21
Total Freight	
Paid to date	4,261.52
Credits taken to date	
Net received	4,261.52
Net paid	
Credits not taken	
Net receivable	

By Customer XCL
Done
Show

Options
FastSample
Sort
Sets
Search
New Records
Return
Related Switch
Quick Switch

Dr Issue
Sales Adj
Revals
Totals
Delete
Highlight UD

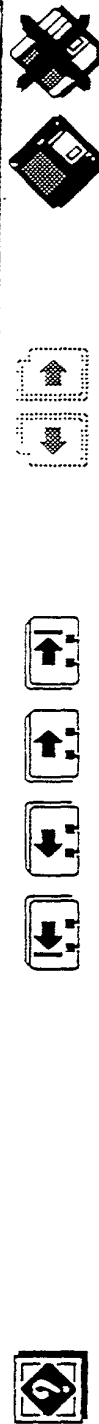
FIG 84

669720 4669960

File Edit Enter Select Reports Mega Activities

CustPayments: Modify Records

CustPayments									
ESL/TRW-A56									
Check: 429069 1/17/95									
Amount	Cust Inv Total	Cust Crd Total	Balance						
35,038.01	40,062.44	-5,024.43							
(Edit Payment)	Invoice Disb	Credit Disb	Disb to Cash						
Bal	40,062.44	-4,967.05	-57.38						
Stub -> Payment distribution (red=Credit, or au bckgrnd=Not Reconciled, italics=Not Cleared)									
Check Stub Ref	Rel Inv	Applied to	Type	Stub Amnt	Applied Amnt	Rec	C	Notes	
4731	4731	4731	Invoice	24,866.28	24,866.28	✓		DM32889 INVOICE 4695 PAID	
4737	4737	4737	Invoice	5,646.75	5,646.75	✓		ON CHECK 429068	
4829	4829	4829	Invoice	9,549.41	9,549.41	✓		DM32888/4737	
DM32890/4829	4829	CM-4829-1	Credit	-1,749.86	-1,749.86	✓		AMT\$2806.93 CM\$2806.92	
DM32889/4695	4695	CM-4695-3	Credit	-467.64	-467.64	✓			
Invoices applied (gray bckgrnd=short pay)									
Invoice	Date	MWS	Inv Amnt	Dstrbtd	P:	Credit Memo	Date	Credit	Taken Tt
4731	12/06/94	M94-17130	24,866.28	24,866.28	24	CM-4829-1-31	2/26/95	1,749.86	1,749.86
4829	12/13/94	M94-17204	9,549.41	9,549.41		CM-4695-3-49	5/4/95	467.64	467.64
4737	12/06/94	M94-17135	5,646.75	5,646.75		CM-4737-1-88	12/22/94	5,749.55	5,749.55



TIG 86

OverUnderPay

OverUnderPay

218510

7/21/95

OverUnderPay

218510

7/21/95

First Deposit

218510

7/21/95

Amount

227,253.67

Cust Inv Total

227,253.67

Invoice Dist

227,211.59

Credit Dist

42.08

Balance

42.08

To Cash

42.08

To Crd

0.00

Bad Debt

0.00

Reconciled

Approved

Posted

7/29/95

Approved

Posted

Created by

Ths m

Distribute

AN Voucher

OverUnderPay

218510

7/21/95

First Deposit

218510

7/21/95

Amount

227,253.67

Cust Inv Total

227,253.67

Invoice Dist

227,211.59

Credit Dist

42.08

Balance

42.08

To Cash

42.08

To Crd

0.00

Bad Debt

0.00

Reconciled

Approved

Posted

7/29/95

Approved

Posted

Created by

Ths m

Distribute

AN Voucher

OverUnderPay

218510

7/21/95

First Deposit

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Amount

227,253.67

Cust Inv Total

227,253.67

Invoice Dist

227,211.59

Credit Dist

42.08

Balance

42.08

To Cash

42.08

To Crd

0.00

Bad Debt

0.00

Reconciled

Approved

Posted

7/29/95

Approved

Posted

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Distribute

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Invoice Dist

227,211.59

Credit Dist

42.08

Balance

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42.08

To Crd

0.00

Bad Debt

0.00

Reconciled

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To Cash

42.08

To Crd

0.00

Bad Debt

0.00

Reconciled

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Posted

7/29/95

Approved

Posted

Created by

Ths m

Distribute

AN Voucher

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218510

7/21/95

First Deposit

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7/21/95

Amount

227,253.67

Cust Inv Total

227,253.67

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227,211.59

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42.08

Balance

42.08

To Cash

42.08

To Crd

0.00

Bad Debt

0.00

Reconciled

Approved

Posted

7/29/95

Approved

Posted

Created by

Ths m

Distribute

AN Voucher

OverUnderPay

218510

7/21/95

First Deposit

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7/21/95

Amount

227,253.67

Cust Inv Total

227,253.67

Invoice Dist

227,211.59

Credit Dist

42.08

Balance

42.08

To Cash

42.08

To Crd

0.00

Bad Debt

0.00

Reconciled

Approved

Posted

7/29/95

Approved

Posted

Created by

Ths m

Distribute

AN Voucher

OverUnderPay

218510

7/21/95

First Deposit

218510

7/21/95

Amount

227,253.67

Cust Inv Total

227,253.67

Invoice Dist

227,211.59

Credit Dist

42.08

Balance

42.08

To Cash

42.08

To Crd

0.00

Bad Debt

0.00

Reconciled

Approved

Posted

7/29/95

Approved

Posted

Created by

Ths m

Distribute

AN Voucher

FIG 88

[illegible]

Unen_Invoices: 7 of 22898 (Sales-MIWS)

Invoice - pay - ven/terms	In - En - Rv	MVS /qty - cost	PO - billed	Next payment	Status - problem	RMA - Veredit	Disc - Dt - \$ - Ls	Cust Inv Stats	Review Status	Date -	Pay -	Voucher
1-5237969	10/3/96	INVENTORY 4			Paid-Ord		10/3/96	Inventory	[Ord]	11/2/96 - 5,600 00 -		
TECHDATA	10/7/96	5,600 00	5,600 00				Avail.					
TECHDATA	N30 11/26/96	P: 5,600 00 L: 5,600 00	12/5/96	*9157 R: multiple	V							
	AP Posted											
ISO-01138-21	2/5/97	M97-24410	1	24410	Paid-RMA-BC	R-257429CR	2/5/97	12965	[Cred]	3/7/97 - 41 69 -		
MicroD	2/11/97	41 69	41 69			50-04042-11	Avail.					
	N30 2/7/97	P: 41 69 L: 41 69	3/5/97	*9375 R: multiple	V							
	AP Posted											
236-139711	2/10/97	Multiple	8	6,441 52	Paid-Cred-BC	R-257292CR	2/10/97	Multiple	[Cred]	3/5/97 - 6,441 52 -		
DEUTSCHE-PLS	2/14/97	6,441 52	6,441 52			Multiple	Avail.					
MicroD	N30 2/11/97	P: 6,441 52 L: 6,441 52	3/5/97	*9372 R: multiple	V							
	AP Posted											
11-39282-11	6/5/97	Multiple	10	777 43	Reconciled-Ord		6/5/97	Multiple		7/5/97 - 777 43 -		
Merisel	6/9/97	777 40	777 43				Avail.					
	N30 6/6/97											
13-32564-11	6/1/97	M97-24919	1	24919	Reconciled-Ord		6/1/97	13535		7/1/97 - 360 24 -		
Merisel	6/9/97	360 24	360 24				Avail.					
	N30 6/6/97											
1012	5/21/97	Expenses		6/20/97	Not Reconciled		5/21/97	No Invoices	[Ir-x]	6/20/97 - 900 00 -		
RX LANIER ELEC	6/10/97		900 00	900 00	Building maint		Avail.					
LANIER ELEC	N30 00/00/00											
E106	5/21/97	Expenses		6/20/97	Not Reconciled		5/21/97	No Invoices	[Ir-x]	6/20/97 - 900 00 -		
RX LANIER ELEC	6/10/97		900 00	900 00	*Estimate fluorescent		Avail.					
LANIER ELEC	N30 00/00/00											

Options

☐ Exclusive
 ☐ Problems
 ☐ Vendor RMA

☐ Sort
 ☐ Find
 ☐ Sets

☐ New Records
 ☐ Return

☐ RelatedSwitch
 ☐ QuickSwitch

☐ Historical On
 ☐ Set Partners Acts

☐ Remove PrePaid
 ☐ Act Distribution

☐ Total Billed
 ☐ Need to pay

71689

Invoices: 0[illegible]

 Add
 Delete

Done Cancel

FIG 90

[illegible]

FIG 91

FIG 92

Daily Vendor Verification		
Found	10/16/97 3:13 PM	Done
62	Miscellaneous invoices (includes pre-approved)	
	Clean with RMA (full credit) - cRMA	
2	Clean with Credit Memos (not RMA) - cCred	
	Clean reconciled by Credit - cRBCr	
2	Clean inventory - cInvent	
2	Clean internal use - cInt	
20	Clean manually reconciled - cMan	
3	Clean replacements - cRpl	
	Clean drop shipments - cDS	
24	Completely Clean invoices - cC	
53	Total clean invoices	
2	No MVS - NoMVS	
65	Not reconciled (includes pre-approved) - NR	
11	Replacement/RMA without credit - Cred	
	Not received discrepancies - Rcvd	
	Not shipped discrepancies - Shpd	
	No customer invoices - CustInv	
8	Freight/tax charges - FrTx	
14	Order date discrepancies - Ord	
	Cost/Price discrepancies - CP	
99	Total Invoices with discrepancies	
120	Not reconciled (not including pre-approved)	
86	Reconciled	
	Pre-approved	
	Approved	
7	Scheduled	
215	Total not paid	

Invoices: 0

Invoice #	P0	P1	Freight	Tc
1231	123	UP		

Add Invoices

Shipping records for which period?

Start

▼

00/00/00

End

▼

00/00/00

Cancel

OK

+ Add

- Delete

Freight Bill

Done

Cancel

115-911

Defaults: Modify Records

Defaults		Accounting Setup		OL Closing	
Cash Account	Commission Account (>=Debit)	Credit Card (AP)	Credit Card Expense	Retained Earnings (>=Credit)	
1010 Cash in Bank #1	6000 Salaries - Var.	7415 Credit Card Expense	7415 Credit Card Expense	5900 Prior Year's Retained Earnings	
Accounts Receivable	Accounts Payable	Or Land Acquired Income Acct (>=Credit)	4015 Credit Card Acquired Income	Check Acct Paid	
1210 Trade Acct Receivables	2010 Trade Accounts Payable	2050 Acquired Income	2050 Acquired Income		
Net Sales Income Account (>=Credit)	Cost of Goods Sold - Goods (>=Debit)				
4010 Sales Income	5006 Cost of Goods Sold (Goods)				
Tax Income Account (>=Credit)	1327 Dividends				
2310 Sales Tax Payable	Tax COG Account (>=Debit)				
Freight Income Account (>=Credit)	5007 Cost of Goods Sold (NonGoods)				
4090 Shipping and Handling	Freight COG Account (>=Debit)				
Labor Income Account (>=Credit)	5007 Cost of Goods Sold (NonGoods)				
4075 Service Income	Misc COG Acct (>=Debit)				
Misc Income Acct (>=Credit)	5007 Cost of Goods Sold (NonGoods)				
Bad Debt Expense Acct (>=Debit)	Interest COG Acct (>=Debit)				
6030 Bad Debt Expense	5007 Cost of Goods Sold (NonGoods)				
AP/AR/Inv/Exp/Inv	Shipping Expense Acct (>=Debit)				
Direct Write Off Method	7410 Shipping				
Returns/Allowance Acct (>=Debit)	AP/AR/Inv/Exp/Inv				
4660 Sales Returns/Allowance	Purchase Returns Acct (>=Credit)				
	5030 Purchase Returns				
	Purchase Discounts Acct (>=Credit)				
	5020 Purchase Discounts				
	Inventory Support				
	Account for Cust Purch Inventory				
	MEGA CUSTOMER INVENTORY				
	Account for RMA Inventory				
	MEGA RMA INVENTORY				
	Merchandise Inventory (>=Debit)				
	1410 Merchandise Inventory				



0

Accrued Expense acct is under here for possible future use - ungroup

FIG 95

ChartOfAccts: Modify Records

ChartOfAccts

Financial Code

IP

Account Code

4010

Account

Sales Income

Account type

Revenue


☐ Bank account





☐ Credit card account



☐ Debit to Increase

☒ Credit to Increase

Details Switch Setup








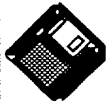


FIG 96

Chart of Accounts: 95 of 95 (Sales-MWS)

?

Search

+

New Records

↶

Return

QuickSwitch

BA 1010

Cash in Bank #1

Asset

Debit

Credit

197,944.07

BA 1210

Trade Acct Receivables

Asset

Debit

Credit

37,259.04

BA 1220

Notes Receivable

Asset

Debit

Credit

BA 1240

Other Receivables

Asset

Debit

Credit

BA 1250

Employer's Loans and Advances

Asset

Debit

Credit

BA 1410

Merchandise Inventory

Asset

Debit

Credit

11,848.54

BA 1510

Prepaid Expense

Asset

Debit

Credit

BA 1520

Pepaid Fed. Corp. Tax

Asset

Debit

Credit

BA 1530

Prepaid Franchise Tax

Asset

Debit

Credit

BA 1610

Furniture and Fixtures

Asset

Debit

Credit

BA 1620

Office Equipment

Asset

Debit

Credit

BA 1630

Class Room Equipment

Asset

Debit

Credit

BA 1640

Vehicles

Asset

Debit

Credit

BA 1650

Leasehold improvement

Asset

Debit

Credit

BA 1710

ACC. Depreciation - F&F

Contra Asset

Credit

Debit

BA 1720

Acc. Depreciation - Office Equip.

Contra Asset

Credit

Debit

BA 1730

Acc. Depreciation - Class Room

Contra Asset

Credit

Debit

BA 1740

Acc. Depreciation - Lease Hold

Contra Asset

Credit

Debit

BA 1750

Loans to Shareholder

Asset

Debit

Credit

BL 2010

Trade Accounts Payable

Liability

Credit

Debit

RI 2020

Auto Loan - Current

Liability

Credit

Debit

Fig 97

Char10fAccnts

☐ **Bank account**☐ Credit card account

Financial Code IP

Account Sales Income

Account type Revenue

☐ Debit to Increase ☒ Credit to Increase

[illegible]

Setup



FIG 98

Accts_Rcvable: Modify Records			
Customer Setup			
Company Name: ORACLE	Company Code: Oracle	Seq#: 123	Sales Rep Code: RJ.CASTRO
Receivables Acts <input checked="" type="checkbox"/> Set Def		Freight Income/Payable Acts <input checked="" type="checkbox"/> Set Def	
Accounts Receivable (>=Debit)		Freight Acts (>=Credit)	
<input checked="" type="checkbox"/> Trade Acct Receivables		<input checked="" type="checkbox"/> Shipping and Handling	
Sales Income Acts <input checked="" type="checkbox"/> Set Def		Labor Income/Payable Acts <input checked="" type="checkbox"/> Set Def	
Sales Acts (>=Credit)		Labor Acts (>=Credit)	
<input checked="" type="checkbox"/> Sales Income		<input checked="" type="checkbox"/> Service Income	
Tax Income/Payable Acts <input checked="" type="checkbox"/> Set Def		Misc. Income Acts <input checked="" type="checkbox"/> Set Def	
Tax Acts (>=Credit)		Misc Income Acts (>=Credit)	
<input checked="" type="checkbox"/> Sales Tax Payable		<input checked="" type="checkbox"/> Misc. Income	
		<input type="checkbox"/> Credit Card Acct <input type="checkbox"/> Inventory Acct	
<input type="button" value="Open Account"/>			

FIG 99

Accts_Rcvable: 12 of 827 (Sales-MWS)

[illegible]

```

graph TD
    Q[?] --> D[Delete]
    D --> S[Sort]
    S --> SE[Sets]
    SE --> SR[Search]
    SR --> R[Return]
    R --> GI[Get Inventory]
    R --> GCC[Get Credit Card]
    GI --> O[Options]
    GCC --> O
  
```

FIG-100

FIG 101

FIG 101

Accts_Payable

Partner GL Setup

Partner Name
Ingram MicroD

Partner Code
MicroD

Credit Payee
MicroD

☒ Approved

☒ Vendor
☐ Manufacturer
☐ Carrier
☒ Payee

Accounts Payable (>=Credit)

✓ Trade Accounts Payable

✓ Set Def

↑ ↓

+

-

Accrued Payables (>=Credit)

✓ Accrued Payable

✓ Set Def

↑ ↓

+

-

COG Accounts (>=Debit)

✓ Cost of Goods Sold (Goods)

✓ Set Def

↑ ↓

+

-

COG Misc. Accounts (>=Debit)

✓ Cost of Goods Sold (NonGoods)

✓ Set Def

↑ ↓

+

-

COG Tax Accounts (>=Debit)

✓ Cost of Goods Sold (NonGoods)

✓ Set Def

↑ ↓

+

-

COG Interest Accounts (>=Debit)

✓ Cost of Goods Sold (NonGoods)

✓ Set Def

↑ ↓

+

-

COG Freight Accounts (>=Debit)

✓ Cost of Goods Sold (NonGoods)

✓ Set Def

↑ ↓

+

-

☒ Cost of Goods Payee
☐ Expense Payee
☐ State Tax Payee
Reserved space for more expense payees
☐ Automatic Invoice

Open Account

Reset Defaults

test



Accts Payable: 1144 of 1144 (Sales-MWS)

Code	Partner Name	Red= BaseLine vendor	Accounts payable	Accrued payable	Total payable	Accrued li
<input checked="" type="checkbox"/> MicroD	Ingram MicroD	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG	3,661.53	15,293.67	-4
<input checked="" type="checkbox"/> Cmplnd	Computerland	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG	532.70	532.70	-
<input checked="" type="checkbox"/> Merisel	Merisel	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG	7,369.74	7,369.74	-2
<input checked="" type="checkbox"/> Mega1	Mega Network, Inc.	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG			
<input checked="" type="checkbox"/> TD	Tech Data Corporation	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG			
<input checked="" type="checkbox"/> WordMarc	WordMARC International Corporation	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG			
<input checked="" type="checkbox"/> COMPVIDEO	COMPUTERVIDEO	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG			
<input checked="" type="checkbox"/> MICROCENTRL	MICRO CENTRAL, INC.	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG			
<input checked="" type="checkbox"/> VMI	VMI CORP	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG			
<input checked="" type="checkbox"/> OPCODE	OPCODE SYSTEMS	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG			
<input checked="" type="checkbox"/> IBM	IBM CORPORATION	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG			
<input checked="" type="checkbox"/> ACRPLS	ACROPOLIS SYSTEMS INCORPORATED	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG			
<input checked="" type="checkbox"/> ATS	Anthem Technology Systems	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG			
<input checked="" type="checkbox"/> Kenfil	KENFIL	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG			
<input checked="" type="checkbox"/> Newer	Newer Technology	<input checked="" type="checkbox"/> Ven <input type="checkbox"/> Mfgr <input type="checkbox"/> Car <input checked="" type="checkbox"/> Payee	<input type="checkbox"/> Expense <input checked="" type="checkbox"/> COG			

Delete/Maint
 Sets
 Search
 New Records
 Return
 QuickSwitch
 Vendors Locked
 Approve
 Options

Fig 103

5891F

Partner Accrued Payable (Received without Invoice)

FIG 104

7:50 A

File 105

Gen Journal: 58 of 58 (Sales MISC)					
Date	Account Titles and Explanation	Post Ref	Debit	Credit	
546 5/13/97	Cash in Bank #1	1010	1,919.84		
546	Trade Acct Receivables	1210		1,919.84	
546	<i>To record cash received to AR 5/13/97</i>				
547 5/14/97	Trade Acct Receivables	1210	30,183.75		
547	Sales Income	4010		27,854.00	
547	Sales Tax Payable	2310		2,298.98	
547	Shipping and Handling	4090		30.77	
547	<i>To record Customer Invoices issued 5/14/97</i>				
548 5/15/97	Cash in Bank #1	1010	74,615.40		
548	Trade Acct Receivables	1210		74,615.40	
548	<i>To record cash received to AR 5/15/97</i>				
549 5/19/97	Cash in Bank #1	1010	59,649.38		
549	Trade Acct Receivables	1210		59,649.38	
549	<i>To record cash received to AR 5/19/97</i>				
550 5/23/97	Cash in Bank #1	1010	11,804.31		
550	Trade Acct Receivables	1210		11,804.31	
550	<i>To record cash received to AR 5/23/97</i>				

Cash Rcpts Jrnl



Sort Selection

Show Explanations

Related Switch

QuickSwitch

Manual Entry

Search

Return

Print

Fig 106

FIG 107

FIG 107

[illegible]

FIG 108

Mega Network Inc.
Income Statement2

Operating revenue

Gross sales		100,000.00
Less: Sales discounts	100,000.00	
Sales returns and allowances	<u>100,000.00</u>	<u>200,000.00</u>
Net sales		-100,000.00

Cost of goods sold

Merchandise inventory, start of period		100,000.00
Purchases	100,000.00	
Less: Purchase discounts	100,000.00	
Purchase returns and allowances	<u>100,000.00</u>	<u>200,000.00</u>
Net purchases		-100,000.00
Add: Transportation-in	<u>100,000.00</u>	
Net cost of purchases		
Cost of goods available for sale		100,000.00
Less: Merchandise Inventory - end of period		<u>100,000.00</u>

Cost of goods sold

Gross Margin -100,000.00

Operating expenses:

Selling expenses

Sales salaries and commissions expense	100,000.00	
Advertising expense	100,000.00	
Rent expense	100,000.00	
Supplies expense	100,000.00	
Utilities expense	100,000.00	
Depreciation expense	100,000.00	
Other selling expenses	<u>100,000.00</u>	<u>700,000.00</u>

Administrative expenses

Salaries expense, executive	100,000.00	
Insurance expense	100,000.00	
Supplies expense	<u>100,000.00</u>	<u>300,000.00</u>

Total operating expenses 300,000.00

Income from operations -400,000.00

Nonoperating revenues and expenses

Nonoperating revenues

Interest revenue	<u>100,000.00</u>
	-300,000.00

Nonoperating expenses

Interest expense	<u>100,000.00</u>
------------------	-------------------

Net Income -400,000.00

Fig 109



FIG 110

FIG 111

FIG 111

[illegible]

211-912

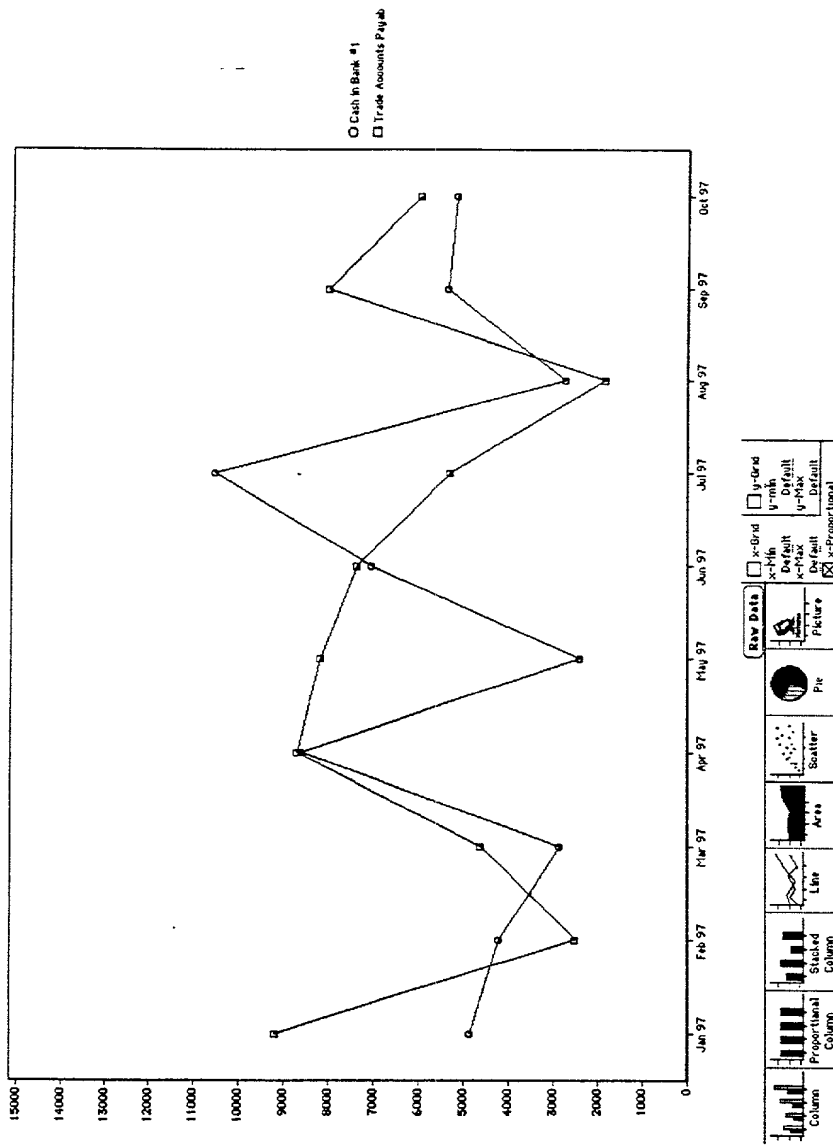


FIG 113

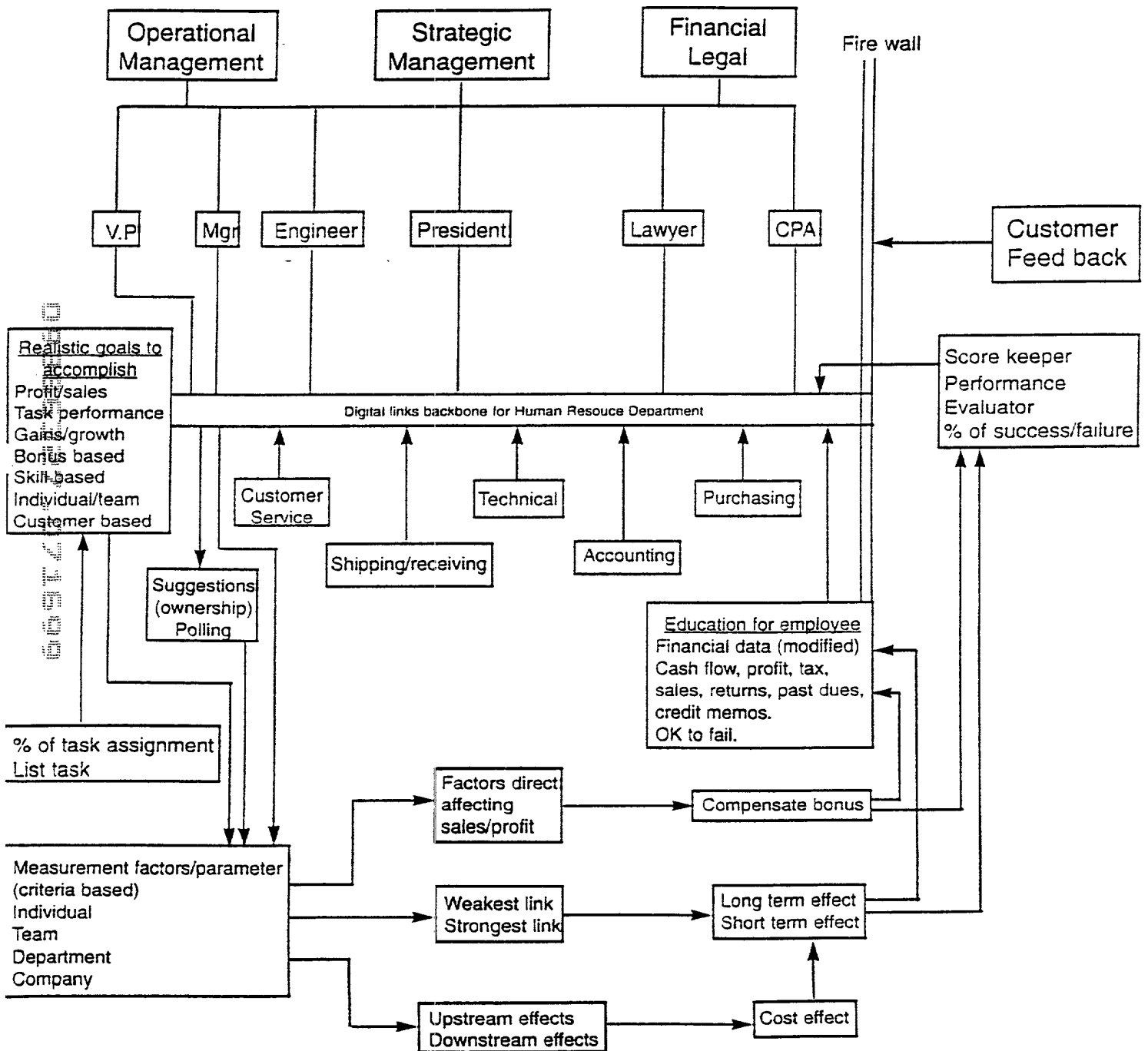


FIG 114

Candidate

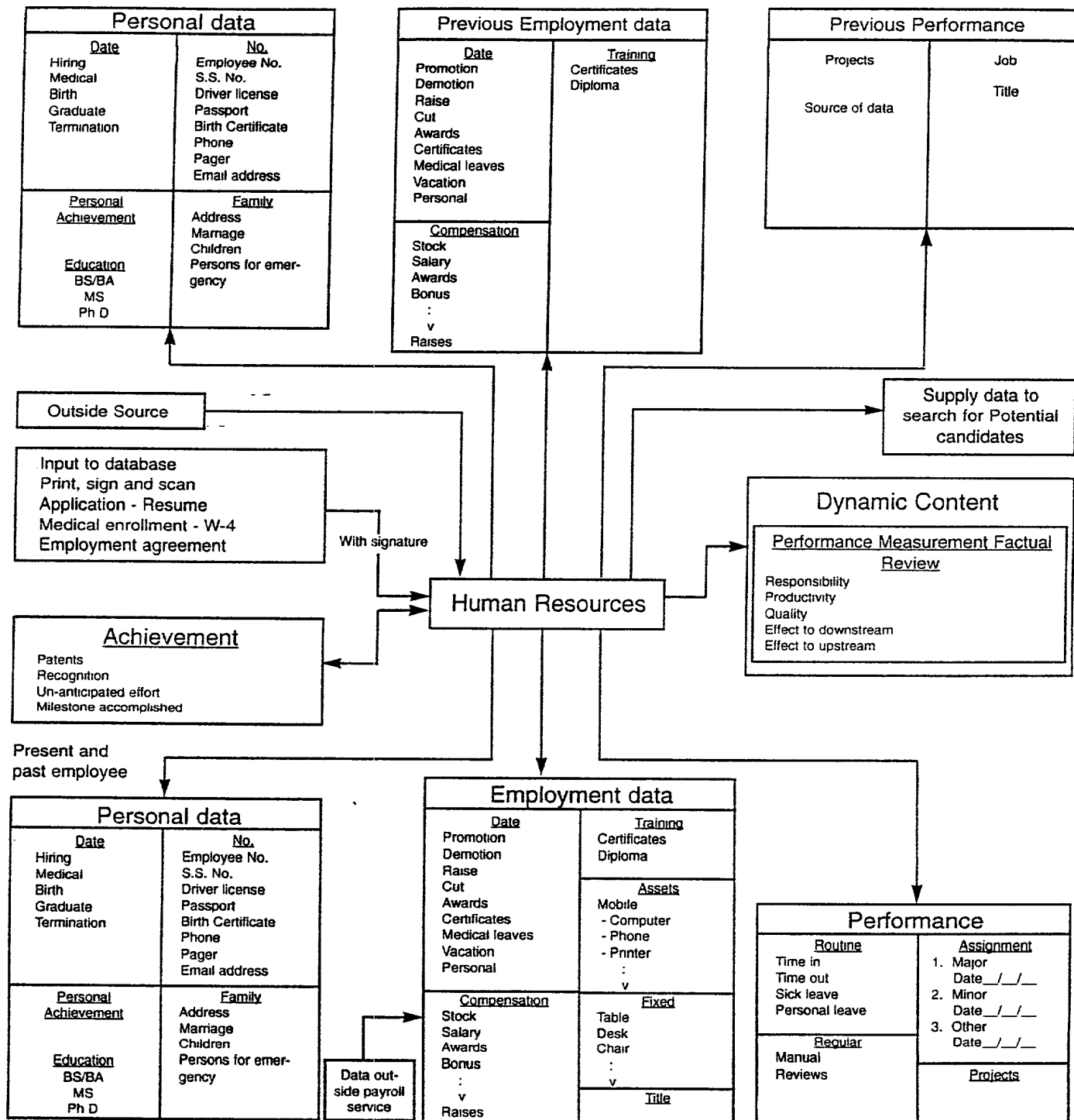


FIG 115

Algorithm of Activity Data

Major Measuring Category								
Assignment	Qty by period	\$ by period	Time between date	Responsible Dept.	RMA		Upstream	Downstream
					Qty between date	Act. by		
Quotes	No., No. convert to MWS	Total amt. Post. Scost Install cost Freight cost	Create date post date Quote date	Sales	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Customer	Customer Service
MWS	Total items, total amt	Total amt., Post. Scost, Install cost, Freight cost	Create date Reviewed post date	Sales Customer Service	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Customer Service	Purchase
Cust. Inv.	Total Inv., Total RMA, # of 30 days, 45 days, etc	Total amt. Price, Install cost, Freight, Tax	Issue date Printed date Paid date Input	Account Receivable Shipping	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Purchase	A/R
Ven. Inv.	Total Inv #, Past due # of invoices - 30, 60, 90 days	Total amt., Vcost, Post. Freight, Tax	Received from ven. Ship to cust Duc date Paid date Approved Scheduled Reviewed Entry Create date	Account Payable Engineering	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Purchase	A/P
Cust. Cr.	Total items Credit memo	Total cr., Price, Post. Restock, Tax	Create date Issue date	Account Receivable Sales Engineering	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Sales	A/R
Ven. Cr.	Total Items Ven. cr.	Total ven. cr., Post. Vcost, Restock, Tax	Ven. cr memo Rec'd date Payment date	Account Payable Sales	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Sales	A/P
Engineering Install Assembly Test	Items/system Total MWS	Total Install cost, Install items, Ven install cost	Install date Completed Test date	Engineering /Install/ Assembly /Test	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Purchase Sales Rcv	Ship
Ship Receive	Total Boxes Total Items	Total Freight amt	Receive date Ship date	Ship/ Receive Inside Sales	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Purchase	Customer
Ven. Payment	Ven. Invoices V. cr memo Exp. cr. memo	Total amt., Total credit, Total check	Ven. payment Check Post Approve	Account Payable	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Vendor Purchase	A/P
Cust. Payment	Cust Invoices C cr memo	Total amt	C payment Check Post Approve	Account Receivable	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Ship Sales	A/R
RMA	Total RMA items	Total RMA credit	RMA V. rec'd RMA V. ship RMA C. rec'd RMA C. ship	CSR Sales Ship/Rcv Engineering	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Sales Rcv	A/P A/R
Customer	# of customer	Total \$ Total \$ per cust. % of Avg. of month	Duration/customer Rate of growth/period	Sales Account	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Sales	Purchase Customer Service
Vendor	# of vendor	Uncl. inv. Inv \$ Growth rate, %	Duration/vendor Rate of growth/period	Sales Account	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Purchase	Ship/Rcv Install/Engin eering
Purchase	Total items Total MWS B/C items	Scost Post	Under date - MWS date, Spec date - RVC rec'd date Items on file date	A/P Buyer Sales	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Sales	Ship/Rcv Install/Engin eering
Commission /earning	# of format	\$ Rate of increase	\$/period	Sales Purchasing	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	Vendor Customer Purchase	Customer Service
Financial	Total V. inv Total C. Inv	Total A/P Total A/R		Accounting Purchasing	V. rec. date V. ship C. rec. date C. ship Create date Exp.	Exp. Ver V. or C. or Rec. or	NA	NA

FIG 116

Company Performance Analysis

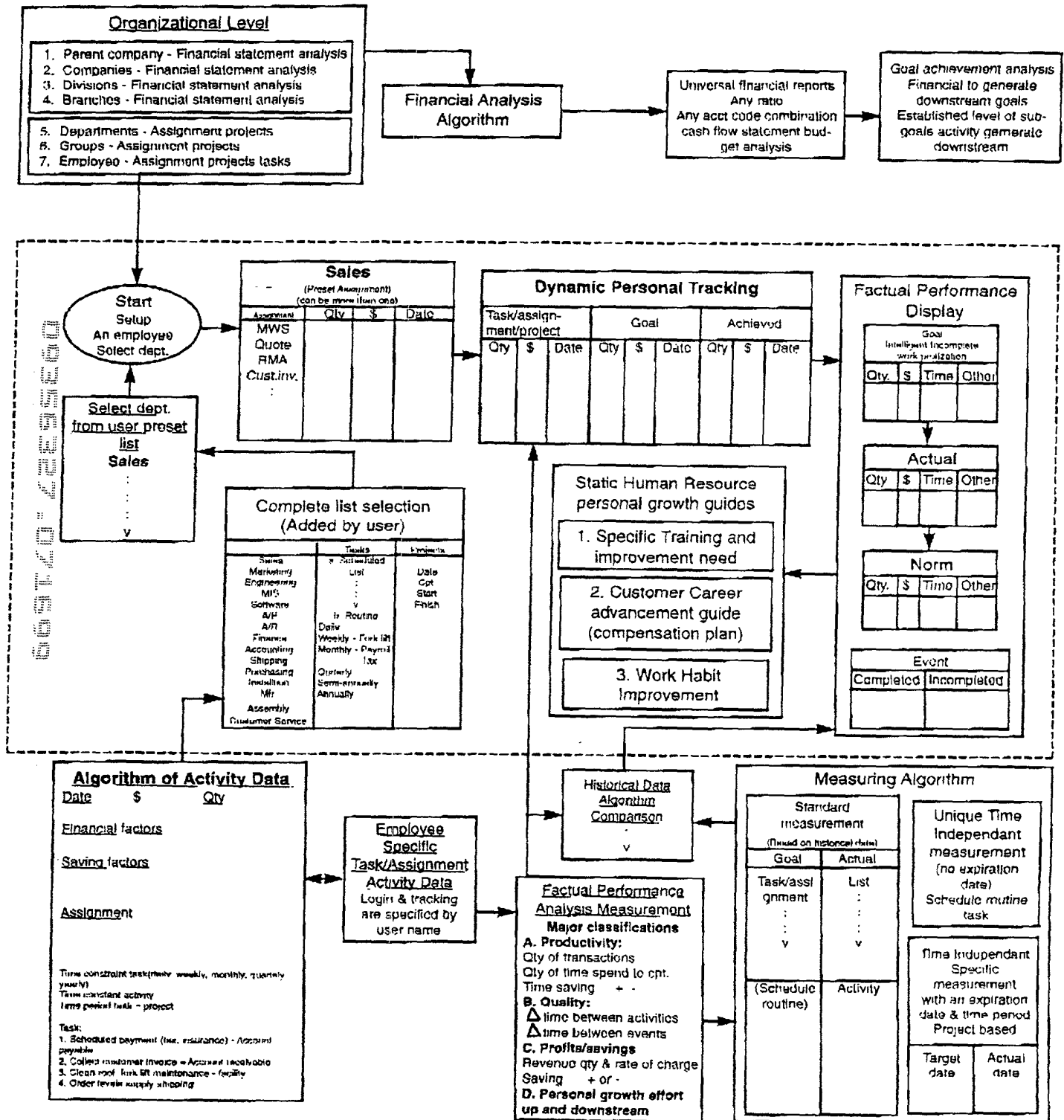


FIG 117

009420 2259560

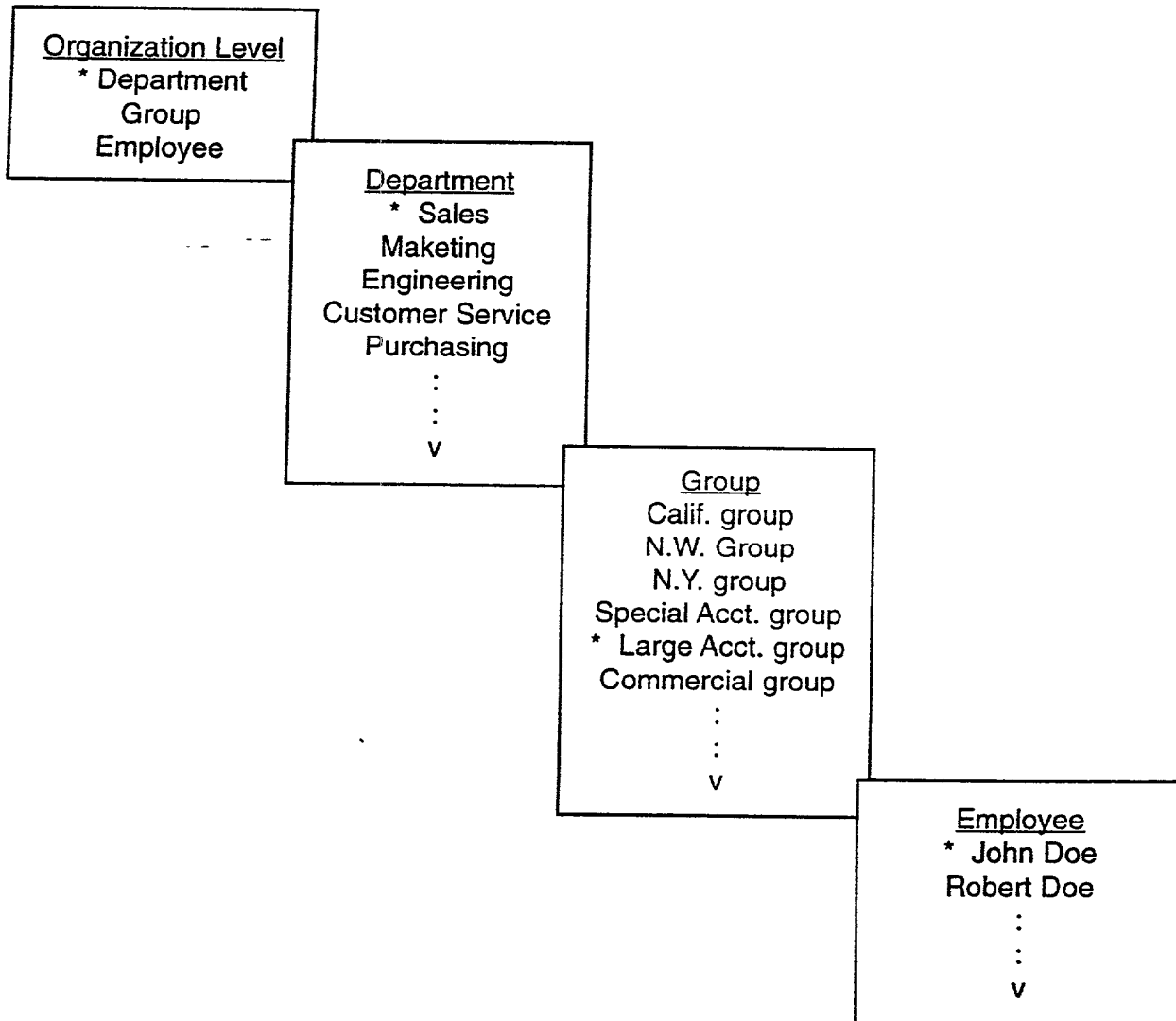


FIG 118

Single Period

Factual Performance Analysis

Sales department
Large Acct group
John Doe

☐ Static data - double click for static personal data
☐ Per period (daily)(weekly)(monthly)(quarterly)

Measuring Parameter	Productivity (A)			Quality (B)		Profitability (C)	Upstream	Downstream
	Qty/period (A1)	\$/period (A2)	% profit/period (A3)	Time period (B1)	Accounting C.Cr. memo (B2)	Gross Margin		
Quotes				PO date Quote date	NA	NA	Customer	Customer Service
MWS				Create date Review date	# of invoice /cr.memo	Commission earned Gross margin	Customer	Purchasing
RMA				Create date Cust. rec'd date	# RMA return for credit # RMA return for exchange	Restocking fee Partial vendor cr memo	Inside Sales	Purchasing Receiving
↓	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓

Multiple Period

Factual Performance Analysis

Sales department
Large Acct group
John Doe

☐ Static data - double click for static personal data
☐ Per period (daily)(weekly)(monthly)(quarterly)

Measuring Parameter	Period #1	Period #2	Period #3	Period #4	Period #5	Period #6	% growth between period	Avg	Goal	History	Grade	Forecast
	A/B/C	A/B/C	A/B/C	A/B/C	A/B/C	A/B/C						
Quotes	A/B/C	A/B/C	A/B/C	A/B/C	A/B/C	A/B/C						
MWS	A/B/C	A/B/C	A/B/C	A/B/C	A/B/C	A/B/C						
RMA	A/B/C	A/B/C	A/B/C	A/B/C	A/B/C	A/B/C						

Select: A1, A2, A3, B1, B2, C

FIG 119

[illegible]

John Doe

- ☐ Static data - double click for static personal data
☐ Per period (daily)(weekly)(monthly)(quarterly)(yearly)
 (choose a period)

[illegible]

Select: A1, A2, A3, B1, B2, C

FIG 120

1:55 A

FIG 121

FIG 121

009120" 22399600

7:51 P.

Invoice - pay - ven/terms	In - En - Rv	MVS/qly - cost	PD - billed	Next payment	Status problem	RMA - Voided	Disc - Bt - Ls	Cost by State	Review Status	Date -	Pay -
35243	RH ACE	12/21/97	1236		Not Recommended		12/21/97		([F1])	1/20/98 - 5,000.00 -	

Invoice #	PO	Payee	Vendor	RH	Buy Date	Total billed	Tax	Freight	Ti
284567		ITT	ITT		12/21/97	10,000.00			NE
1234567									NE

You have already entered this invoice on this batch.

OK

Add Delete

Options: ☒ Exclusive ☐ Problems ☐ Vendor RMA

Buttons:

Fig 122

009720 2229560

Edi

Mega Activities

7:56 A

Invoice #	Inv Date	Payee	Pages	Vendor	RM	Inv Date	Total billed	Tax	Freight	To
4415611-02										

Another invoice with this same number
BUT FROM ITT is on file.
Continue?

No Yes

Invoice #	Inv Date	Payee	Pages	Vendor	RM	Inv Date	Total billed	Tax	Freight	To
4415611-02										

Options Excluded

Problems

Vendor RM

ct Distribution

Partners Acts

FIG-123

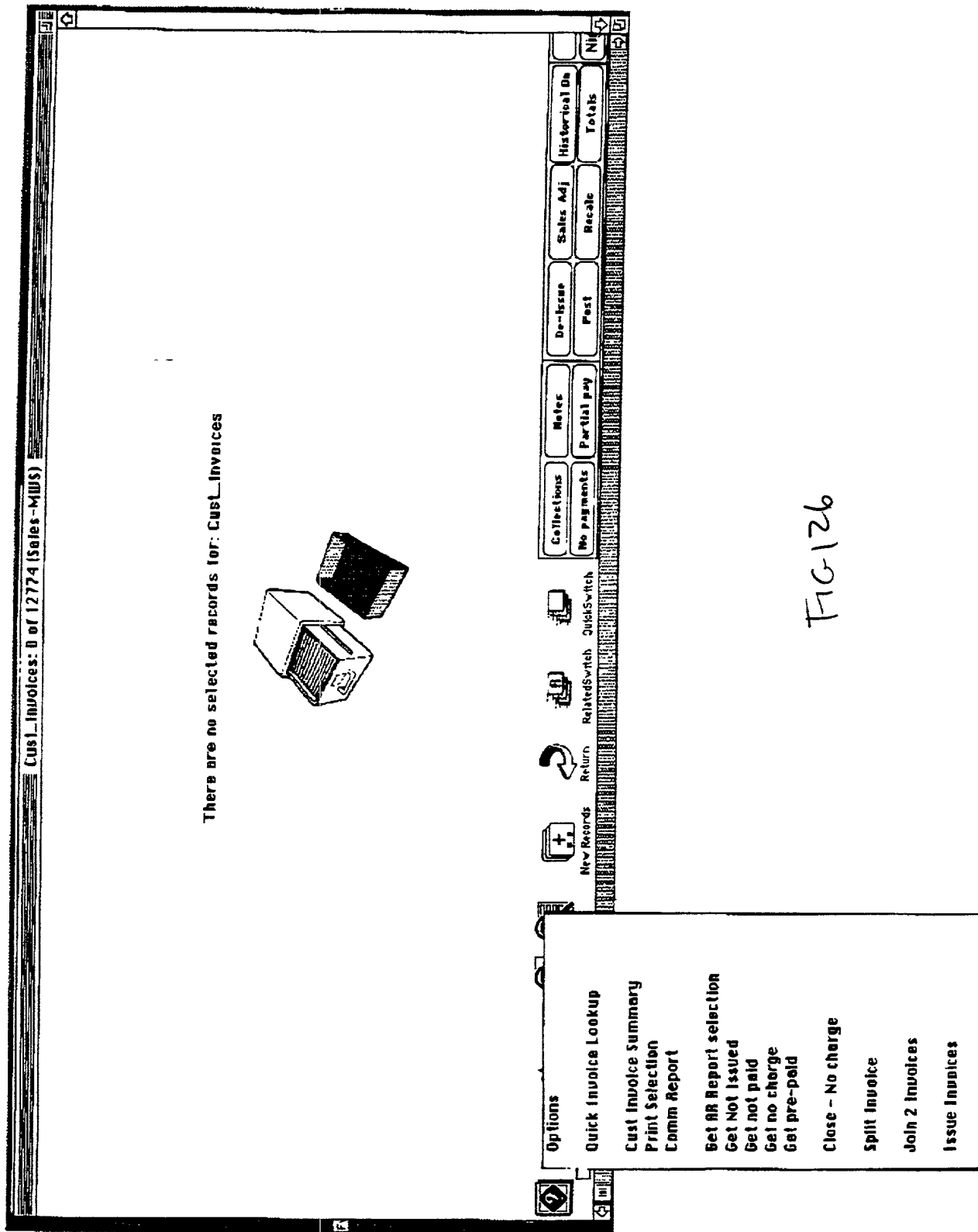


FIG-126

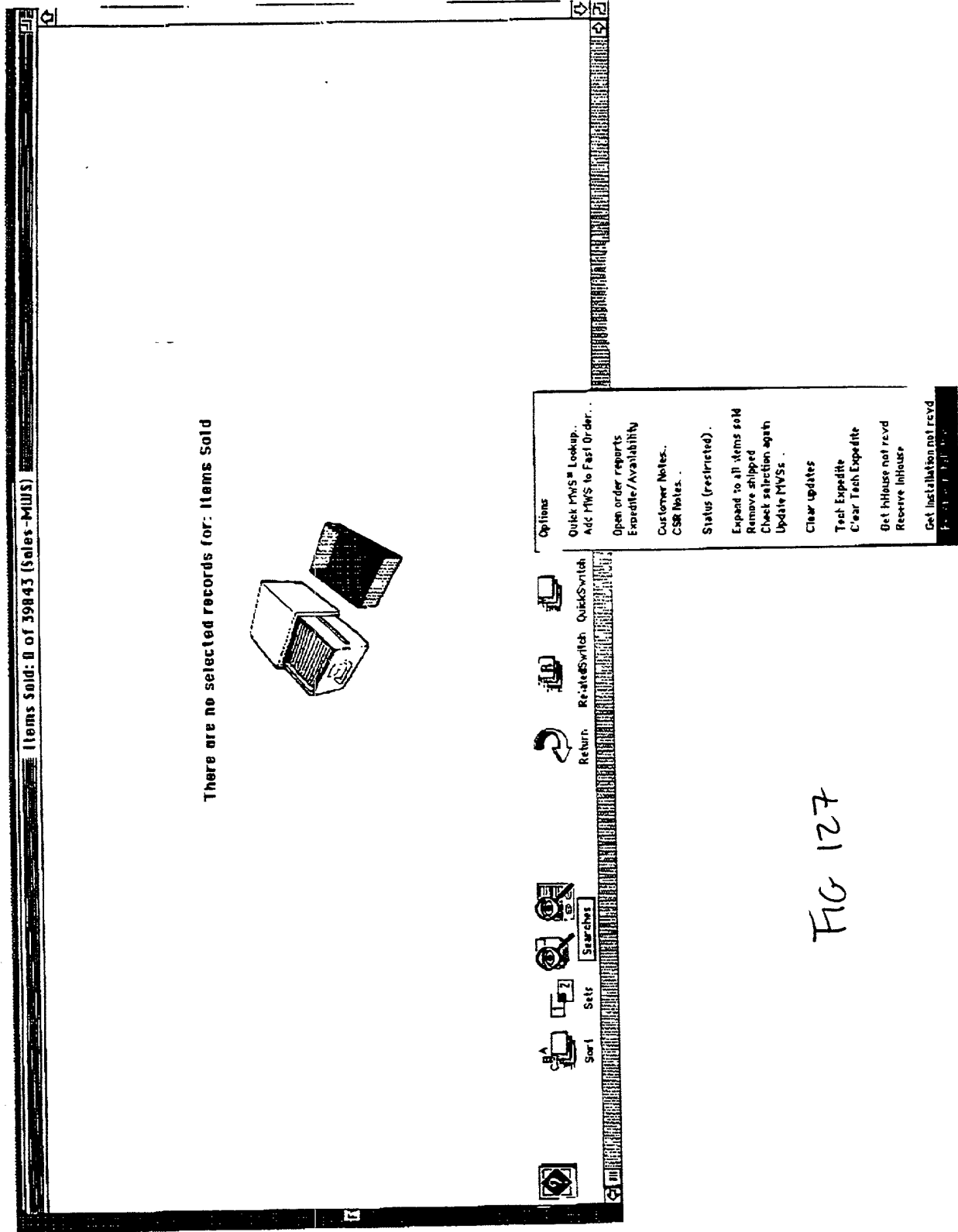


FIG 127

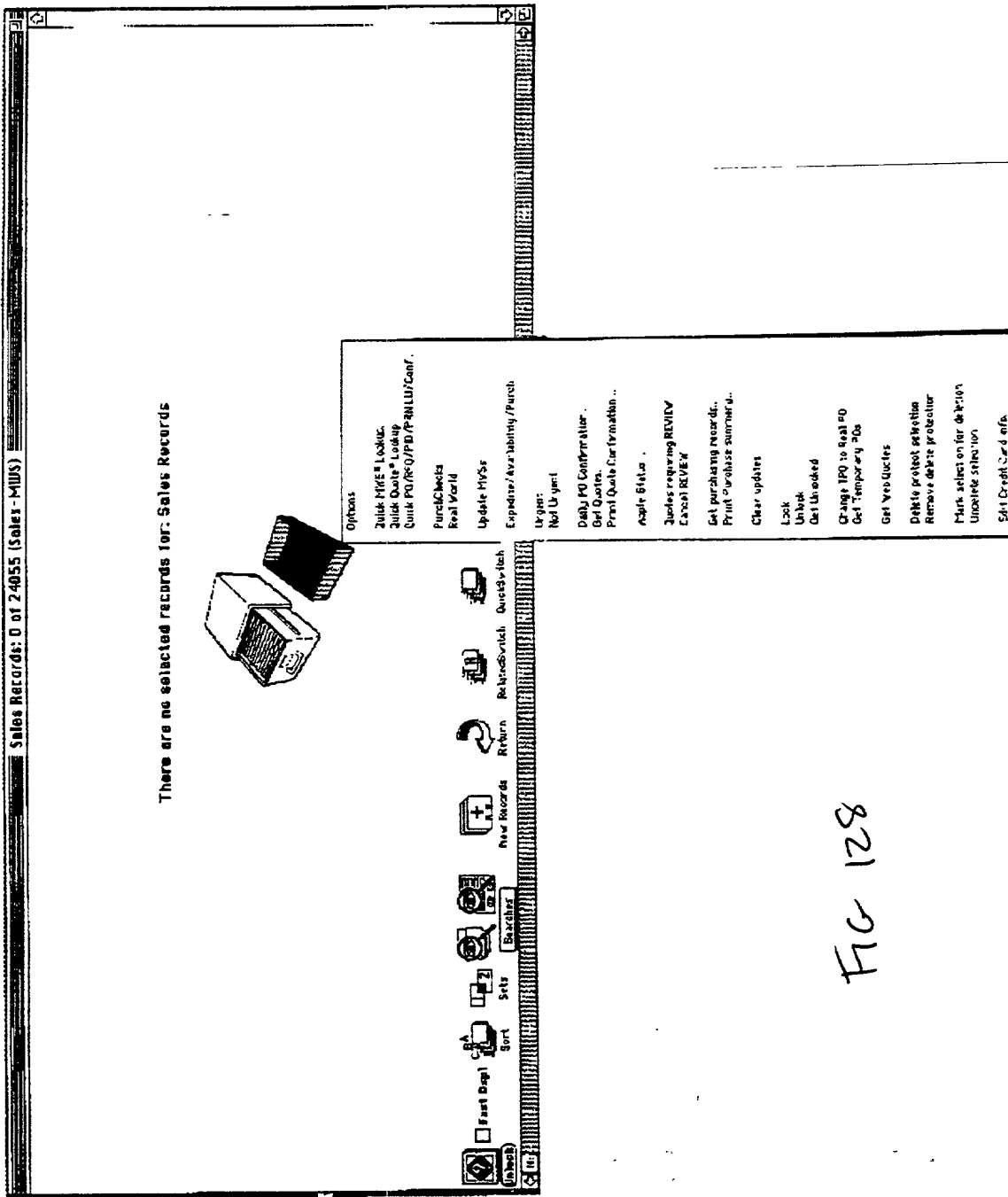


FIG 128

**COMBINED DECLARATION AND POWER OF ATTORNEY
FOR UTILITY PATENT APPLICATION**

Attorney's Docket No.

032151-002

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I BELIEVE I AM THE ORIGINAL, FIRST AND SOLE INVENTOR (if only one name is listed below) OR AN ORIGINAL, FIRST AND JOINT INVENTOR (if more than one name is listed below) OF THE SUBJECT MATTER WHICH IS CLAIMED AND FOR WHICH A PATENT IS SOUGHT ON THE INVENTION ENTITLED:

INTEGRATED BUSINESS-TO-BUSINESS WEB COMMERCE AND BUSINESS AUTOMATION SYSTEM

the specification of which

(check one)

☒ is attached hereto;

☐ was filed on _____ as

Application No. _____

and was amended on _____;
(if applicable)

I HAVE REVIEWED AND UNDERSTAND THE CONTENTS OF THE ABOVE-IDENTIFIED SPECIFICATION, INCLUDING THE CLAIMS, AS AMENDED BY ANY AMENDMENT REFERRED TO ABOVE;

I ACKNOWLEDGE THE DUTY TO DISCLOSE TO THE OFFICE ALL INFORMATION KNOWN TO ME TO BE MATERIAL TO PATENTABILITY AS DEFINED IN TITLE 37, CODE OF FEDERAL REGULATIONS, Sec. 1.56 (as amended effective March 16, 1992);

I do not know and do not believe the said invention was ever known or used in the United States of America before my or our invention thereof, or patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to said application; that said invention was not in public use or on sale in the United States of America more than one year prior to said application; that said invention has not been patented or made the subject of an inventor's certificate issued before the date of said application in any country foreign to the United States of America on any application filed by me or my legal representatives or assigns more than twelve months prior to said application;

I hereby claim foreign priority benefits under Title 35, United States Code Sec. 119 and/or Sec. 365 of any foreign application(s) for patent or inventor's certificate as indicated below and have also identified below any foreign application for patent or inventor's certificate on this invention having a filing date before that of the application(s) on which priority is claimed:

COMBINED DECLARATION AND POWER OF ATTORNEY

Attorney's Docket No.

032151-002

COUNTRY/INTERNATIONAL	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED
			YES_ NO_
			YES_ NO_

I hereby appoint the following attorneys and agent(s) to prosecute said application and to transact all business in the Patent and Trademark Office connected therewith and to file, prosecute and to transact all business in connection with international applications directed to said invention:

William L. Mathis	17,337	Samuel C. Miller, III	27,360	Robert M. Schulman	31,196
Peter H. Smolka	15,913	Ralph L. Freeland, Jr.	16,110	William C. Rowland	30,888
Robert S. Swecker	19,885	Robert G. Mukai	28,531	T. Gene Dillahunt	25,423
Platon N. Mandros	22,124	George A. Hovanec, Jr.	28,223	Patrick C. Keane	32,858
Benton S. Duffett, Jr.	22,030	James A. LaBarre	28,632	Bruce J. Boggs, Jr.	32,344
Joseph R. Magnone	24,239	E. Joseph Gess	28,510	William H. Benz	25,952
Norman H. Stepno	22,716	R. Danny Huntington	27,903	Peter K. Skiff	31,917
Ronald L. Grudziecki	24,970	Eric H. Weisblatt	30,505	Richard J. McGrath	29,195
Frederick G. Michaud, Jr.	26,003	James W. Peterson	26,057	Matthew L. Schneider	32,814
Alan E. Kopecki	25,813	Teresa Stanek Rea	30,427	Michael G. Savage	32,596
Regis E. Slutter	26,999	Robert E. Krebs	25,885	Gerald F. Swiss	30,113


and: Michael J. Ure, Reg. No. 33,089

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Address all telephone calls to: Michael J. Ure, at (650) 854-7400.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

FULL NAME OF SOLE OR FIRST INVENTOR	SIGNATURE	DATE
Charles Wong		Dec 22, 1997
RESIDENCE	CITIZENSHIP	
14250 Miranda Road, Los Altos Hills, California 94022	United States	
POST OFFICE ADDRESS		
Same as above		
FULL NAME OF SECOND JOINT INVENTOR, IF ANY	SIGNATURE	DATE
RESIDENCE	CITIZENSHIP	
POST OFFICE ADDRESS		
FULL NAME OF THIRD JOINT INVENTOR, IF ANY	SIGNATURE	DATE
RESIDENCE	CITIZENSHIP	
POST OFFICE ADDRESS		